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BRITISH BIRDS.

PART II.,

CONTAINING THE WADERS AND WATER-BIRDS,

Is Preparing for Publication.

Harry Williamson
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Aberdeen

A

MANUAL

OF

BRITISH ORNITHOLOGY:

BEING A SHORT DESCRIPTION OF THE

BIRDS OF GREAT BRITAIN AND IRELAND,

INCLUDING THE ESSENTIAL CHARACTERS OF THE SPECIES, GENERA, FAMILIES, AND ORDERS.

BY

WILLIAM MACGILLIVRAY, A.M., M.W.S., &c.

CONSERVATOR OF THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS OF EDINBURGH; LECTURER ON BOTANY IN QUEEN'S COLLEGE, AND IN THE SCOTTISH INSTITUTION; AUTHOR OF A HISTORY OF BRITISH BIRDS MANUALS OF GEOLOGY, BOTANY, &c.

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TO

M. J. C. TEMMINCK,

IN TESTIMONY

OF ADMIRATION OF HIS TALENTS

AS A NATURALIST,

AND OF GRATITUDE FOR BENEFIT

DERIVED FROM THE STUDY OF HIS WORK

ON THE BIRDS OF EUROPE.

WILLIAM MACGILLIVRAY.

M85621

ADVERTISEMENT.

No branch of Natural History has been more cultivated than Ornithology. The great beauty and liveliness of Birds, the diversity exhibited in their actions and mode of life, their wonderful migrations, the variety of modulated sounds which they emit, the facility with which many of them may be domesticated, the degree in which they are subservient to our wants, and various other considerations, render them objects of attraction to persons of every age and condition in society. At no former period has this study been more zealously and successfully prosecuted than at the present day. A mere list of the names of individuals who have written on the Birds of Great Britain would occupy considerable space; and when there are among them so many who have in various degrees contributed to the advancement of knowledge, it might seem unfair or presumptuous to point out those whose merits are most conspicuous.

But, as the most valuable works are too expensive to be available to students of every class, it has seemed to me that, to promote this favourite study, nothing is more wanted than a compendium of British Ornithology, a work sufficiently extended to contain descriptions full enough to enable the student to determine every species, and of so small a size as to be conveniently portable. Were

our three hundred and twenty species described in one volume of the size prescribed for the present series of Manuals, the characters would be too brief to be of much use. I have, therefore, devoted a volume to the Terrestrial and another to the Aquatic species, prefixing to the first a short Introduction to the Study of Ornithology, including all the particulars requisite to enable one not previously acquainted with the subject to compare the objects with their descriptive characters. Although, in a strictly scientific point of view, the division of birds into those of the land and water is not commendable, it is convenient, and in some degree natural and familiar.

The Classification of Birds is a subject of much dispute. In fact, no two authors follow precisely the same plan, or use the same nomenclature. In this state of uncertainty, I have had recourse to nature, and endeavoured to elicit a method which may be at least intelligible. In some instances I have altered the names, conceiving them to be erroneous, or inconsistent; but in every case, the popular, and some of the scientific, appellations are given. The generic characters, as well as those of the orders, include some particulars, especially with reference to the digestive organs, not given in other works, but easily intelligible, and of great importance as indicative of the mode of life of the species. Those who are desirous of obtaining more extended information on this subject, I refer to the only work known to me in which they will find it, my History of British Birds, of which three volumes, including all the species referred to in this Manual, have recently been published.

EDINBURGH, 25*th October* 1840.

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INTRODUCTION

Although densely peopled, traversed in all directions by crowded roads, and surrounded by ships transferring the produce of their manufactures to other countries, from which a corresponding influx takes place, the British Isles are peculiarly favourable to the feathered tribes. The protection afforded by the game laws prevents the destruction of many species which do not come under the care of the legislature, and the enforcement of the rights of property prevents much of the waste of animal life that would otherwise take place; while, on the other hand, the many secure breeding-places on the coast keep up a never-failing supply of such birds as seek their food in the seas. While the extent of land, and its vicinity to the Continent, render the number of terrestrial species equal to that observed in any other country situated in similar latitudes, the presence of the ocean, the diversified indentations of the shores, the numberless islets and rocks along the coast, and the abundance of lakes and streams, are the means of ensuring to us a greater variety of aquatic species than could exist in an inland country. The land and the water being with us equally favourable for the inhabitation of birds, the number of aquatic birds and waders together is almost exactly the same as that of the strictly terrestrial species, there being about an hundred and sixty of each kind, or three hundred and twenty in all.

The person who has a mind to devote his attention, conti-

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nuously or at intervals, to the study of birds, needs be at no loss for opportunities. In almost any part of the country, about an hundred species may be procured without very much difficulty, and the habits of many of them may be satisfactorily studied. Specimens of an hundred and fifty more may be examined in our public museums, which, already numerous, are yearly increasing; and of the remainder one may form some idea from their representations in books. Prepared skins may be obtained in the principal towns; and in preserving the objects which he may procure, the student may obtain the assistance of some of the numerous individuals who devote themselves to the preparation of birds.

Stuffed and mounted skins are not those most useful to the ornithologist, they being too expensive, and requiring too much accommodation. A collection of prepared skins, partially stuffed, and arranged in the properly proportioned drawers of a cabinet, or series of cabinets, will be found much more useful, and much less expensive. But without possessing such a collection, or having free access to one, although the student may know birds by name, he will scarcely acquire a critical knowledge of their characters, their differences, and points of agreement.

Many persons, even professed naturalists, seem to think, that when one can distinguish a bird from every other, name it, assign it its place in an artificial or natural arrangement, and state some particulars of its habits and history, he knows all that is requisite. Such persons, having merely a dry technical sort of knowledge, have no idea of the pleasure to be derived from an intimate study of the structure and functions of birds. A month's study applied to half a dozen species, may afford more knowledge and more delight than the acquisition in the same period of merely the names and distinctive characters of fifty or more.

But few people can devote very much of their time to the study of birds, or of any other branch of natural history; and to those whose leisure is not great, even the names and

characters of objects are useful and interesting. To such persons a manual, like the present, containing a very condensed history of the species, is of importance, as it enables them readily to discover the name of any particular bird, and consequently to refer to any more extended work for further information, should they desire it. Persons having studied birds at intervals, as opportunities have occurred, and having thus acquired considerable, though disjointed, information, will also find it beneficial to refer frequently to a general systematic catalogue, including the essential characters of the species, genera, and families. Students or collectors, making excursions to distant places, and not finding it convenient to carry large treatises with them, will also be benefited by such a catalogue. In short, the uses of manuals like the present are numerous, and so obvious, that it is unnecessary to say more regarding them. Only, let the student not be satisfied with the little which they contain, but use them as a means of acquiring more knowledge, and of connecting and systematizing what he has already obtained.

In all sciences and arts, peculiar terms must be employed, and parts must be intelligibly defined. For the use of persons commencing the study, or not very proficient in it, I shall here present such explanations as will enable them to apply the characteristic phrases employed to the objects which they describe.

Birds are warm-blooded, oviparous, vertebrate animals. They have a brain, enclosed within a skull, a spinal marrow, protected by vertebræ, nerves issuing from these central parts, and distributed to all the organs. Their heart is double, one side of it receiving the blood from the veins, and sending it out by the pulmonary artery into the lungs, whence, on being subjected to the influence of the air, it returns by the pulmonary veins to the other side of the heart, which transmits it, by the aorta, to all parts of the body.

Their lungs are small, and incapable of much dilatation, but they communicate by apertures, with cells or membranous sacs situated in the chest, and among the muscles, and between them and the skin, and even with the cavities of the bones. Hence their respiration is said to be double. They have an internal skeleton, for the support and motion of the parts; are furnished with muscles, or organs subservient to motion; with three double organs of sense, namely, eyes, ears, and nasal cavities; with a tongue, which is partly an organ of taste, partly of prehension, and with a general sense of touch or feeling situated in the skin. Organs of assimilation, for the conversion of external substances into their own nature, and of propagation, for the continuance of their species, are also to be enumerated; together with other parts, which require to be somewhat particularly explained. For this purpose, let us take any bird, in which the external parts are easily distinguished, a Shrike, for example.

A bird may be divided into: the head, *a*; the neck, *b*; the body, *cc*; the tail, *d*; the anterior extremities or wings, *ee*; and the posterior extremities, or legs and feet, *ff*. The *Head* is composed of the brain, its membranes, the bones of the skull and face, the organs of seeing, hearing, smelling, and tasting, with those for the prehension and swallowing of food, and various other subordinate parts. The *Neck* is the more or less elongated and flexile part by which the head is joined to the body, and is composed of the cervical vertebræ, various muscles, the œsophagus or gullet, the windpipe, nerves, and bloodvessels. The *Body* is the basis of the whole, consisting of the dorsal and sacral vertebræ, the ribs, the breast-bone, the clavicles, the heart, bronchi, lungs, liver, stomach, intestines, kidneys, genital organs, and various other parts. The *Tail* is composed of the caudal or coccygeal vertebræ, their muscles, and the tail-quills. The *Anterior Extremity* consists of the bones of the scapula or

shoulder-blade, the humerus or arm, the cubitus or fore-arm, and the hand, with the muscles and quills. The *Posterior Extremity* consists of the femur or thigh, the tibia or leg, the tarsus, or what is commonly but erroneously called the leg, and the toes, with muscles and other parts. All these parts, excepting the bill or anterior part of the jaws, the eyes, the tarsi, and the toes, are generally covered with feathers, attached to the skin.

Fig. 1.

The *Bill* is composed of two mandibles, an upper, 1, and a lower, 2, formed of horny substances ensheathing the jaws. In the upper mandible are distinguished the base, the ridge, of which the outline is named the dorsal line, the sides, the edges or margins, and the point. In the lower mandible are seen the base, the two crura or branches, their junction or the angle, the ridge and its dorsal line, the edges, and the point.

About the head are seen further: the *nostrils*, 3, generally situated in a depression named the nasal sinus; the *angle* of the mouth, 4; the *lore*, or loral space, between the angle of the mouth and the eye; the *eye*, 5, in which are distinguished the pupil or dark central part, the iris or coloured circle surrounding the pupil, the upper and lower eyelids, the supra-ocular ridge, peculiar to the birds of prey. The anterior part of the head above is named the *forehead*, 6; the upper part, the *crown* or top, 7; the hind part, the *occiput*, 8. There are also the *sides* of the head, on which are distinguished the ear-coverts, 9, and the *face* or forepart in general.

The *Neck* may be divided into upper, middle, and lower parts, hind part, sides, and fore part. The upper hind part is named the *nape*, 10; the upper fore part the *throat*, 11, its uppermost part sometimes the *chin*.

In the *Body* are distinguished: the *back*, of which there are the anterior, 12, middle, 13, posterior, 14, regions; the latter also called the *rump*. Also, the *scapular* region, 15, being that of the shoulder-blade and humerus. The *sides* of the body are the parts under the wings. The *breast* commences at the lower part of the neck, 16, and extends to the end of the sternum, 17; from thence to near the tail is the *abdomen* or belly, 18.

In the *Tail* are distinguished, the *tail-quills*, or strong feathers, 19; and the *upper coverts*, 20, and *lower coverts*, 21.

The *Wings* are divided into three regions: the humerus, cubitus, and hand. The joint between the cubitus and hand, 22, is named the *flexure*, or bend of the wing; near it are the feathers attached to the thumb, 23, named the *alula*, or spurious wing; the quills attached to the fingers are named *primary quills*, 24, those which cover them, *primary coverts*, 25; the quills attached to the cubitus are named *secondary quills*, 26, their coverts, *secondary coverts*, 27; while the smaller feathers on the wing are named the smaller *upper*

wing-coverts, 28. There are corresponding *lower* wing-coverts.

In the *Posterior Extremities* are distinguished the *thigh*, very short, and generally concealed; the *leg* or tibia, 29, commonly but erroneously named the thigh; the instep or *tarsus*, 30, erroneously named the leg, generally bare, and having upon its surface plates or scales. Lastly, we have the *toes*, generally four, one directed backwards, 31, and named the hind or first toe; the rest directed forwards, 32, and named the anterior, or, counting from within, the second, third, and fourth toes. The toes are covered with plates and scales, and terminated by claws, or horny sheaths, which vary in size and form.

A few more explanations, referring especially to the bill, toes, and plumage, will be useful.

The *Bill* in birds is an instrument for the prehension of food, and is scarcely ever used for mastication, properly so called, that function being performed by the stomach. It varies greatly in size and form, according to the nature of the food, and accordingly affords some of the most obvious characters for distinguishing the different genera and families, which, in fact, may be easily known by the inspection of that organ alone. Thus, if we take the bill of a bird of the Rapacious order, a Falcon, Fig. 2, for example, we

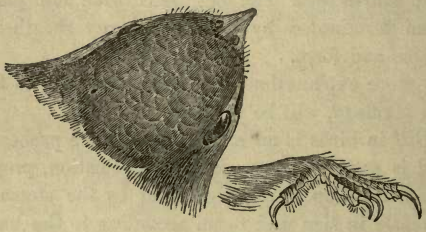
Fig. 2.

shall find it to be as described at p. 48, short, very strong, of nearly equal breadth and height at the base, moderately compressed, that is, flattened sidewise, toward the end; the

upper mandible having its upper outline convex from the base, the sides convex, the edges with a festoon about the middle, and toward the fore part an angular toothlike projection, the tip curved downwards, three-cornered, and sharp; the lower mandible with the angle or meeting of its crura wide and rounded, its lower outline very convex, the edges involute, or curved inwards, and having a rounded notch near the tip, which is truncate, or as if cut off abruptly.

The bill of a Swallow, Fig. 3, is very short, much de-

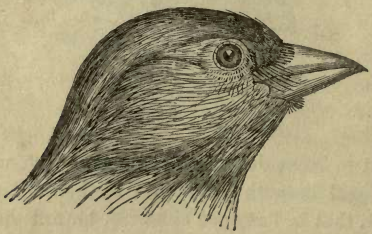
Fig. 3.



pressed, that is, flattened, or as if pressed downwards, and of a triangular form; its upper mandible with its upper or dorsal outline sloping but convex, the edges slightly inflected, or bent inwards, with a distinct notch, close to the tip, which is slender, but blunt; the lower mandible with the angle very wide, the dorsal outline a little convex, the tip rather sharp.

Again, the bill of a Chaffinch, Fig. 4, is short, straight,

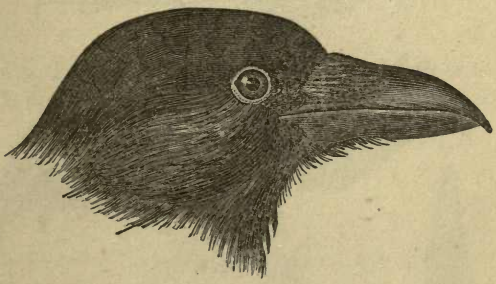
Fig. 4.



conical, about as broad as high at the base, compressed toward the end, and acute; its upper mandible with its upper or dorsal line nearly straight, the ridge broad and convex, as are the sides, the edges inflected or bent inward, the notch obsolete or very slight, the lower mandible with the angle semicircular, the dorsal line straight, the back and sides convex, the edges inflected.

The bill of a Crow, Fig. 5, is rather long, straight, stout,

Fig. 5.



tapering, of nearly equal height and breadth at the base, but compressed toward the end; its upper mandible has the dorsal outline slightly arched, towards the end bent downwards, the ridge rather narrow, the edges direct, that is, perpendicular, neither bent outwards nor inwards, and having a slight notch near the tip, which projects a little beyond the other, and is bent a little downwards; the lower mandible has the angle of moderate length and width, the dorsal line a little convex, the tip rather sharp.

There can be no difficulty in understanding circumstances so simple as these. In considering the bill attention is also to be paid to the line formed by the two mandibles at their meeting. This, the *gape-line*, may be straight, or arched, or variously bent.

The *Tarsus* varies in length and thickness, and may be

bare, Fig. 6, or covered with feathers, Fig. 7, as may even the toes, Figs. 8 and 3.

Fig. 6.

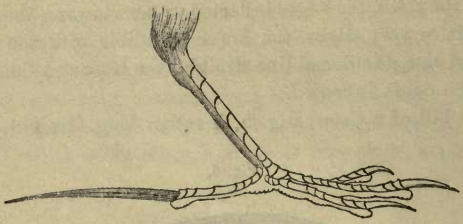


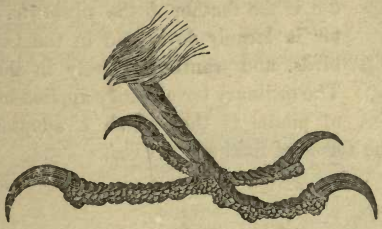
Fig. 7.

Fig. 8.

Although in quadrupeds the number of *toes* or fingers is very frequently five, no birds have so many. By far the greater number have *four*, but very many have only *three*, and one species, the Ostrich, has no more than *two*. The hind toe is the *first*, the inner toe the *second*, the next the *third*, and the outer toe the *fourth*. The fourth toe is always present, so is the third, the second and first are wanting in the Ostrich; and it is the first or hind toe that is wanting in all birds that have only three toes. In the first toe there are always *two* joints, in the second *three*, in the third *four*, and

in the fourth *five*. All the species described in this volume have four toes. Generally one toe only, the first, is directed

Fig. 9.



backwards, Fig. 6; but sometimes also the fourth or outer toe, as is the case in Owls, Woodpeckers, Fig. 9, the Cuckoo,

Fig. 10.

Fig. 11.

and the Wryneck. The toes are generally covered above with large scales, named *scutella*, but in some species there are scutella only at the end, the other parts being covered with *scales*. The *claws* vary in length and form, but the terms used in describing them are easily understood. Thus they are nearly straight in the Lark, Fig. 6; arched in the Nuthatch, Fig. 10.

The *Plumage* varies in texture, being dense, compact, firm, glossy, loose, or downy. Each feather, Fig. 11, is composed of the *tube*, *a*; the *shaft*, *b*; the *outer web*, *c*, and the *inner*

Fig. 12.

web, *d*, always broader. Most feathers have a little additional or *accessory feather*, of a downy texture, attached. Thus in Fig. 12, *a c* is the feather, *b* the *plumule*. The latter is largely developed in the Gallinaceous birds, and wanting entirely in the Pigeons. The ordinary terminology applied to the leaves of plants is that which I adopt for distinguishing the forms of feathers. Thus,

Fig. 13.

Fig. 14.

Fig. 15.

Ovate, having the outline of an egg, Fig. 13.
Lanceolate, tapering at both ends, Fig. 14.
Linear, with the edges parallel, Fig. 15.
Abrupt, cut even at the end, Fig. 16.
Rounded, having the extremity broadly rounded, Fig. 17.
Obtuse, narrowly rounded, Fig. 13, 15.
Acute, sharp-pointed, Fig. 14.
Acuminate, with a long taper point, Fig. 19.
Abrupt and Acuminate, Fig. 18.
Emarginate, having a notch at the end, Fig. 20.

Fig. 16.

Fig. 17.

Fig. 18.

Fig. 19.

Fig. 20.

The *Wing* varies in length and breadth. Thus, it is short, broad, convex, and rounded, in Grouse and Partridges, Fig.

21; long, broad, straight, and pointed, in many Pigeons. In the Falcons, it is acuminate, the second quill being longest, and the first little shorter; and in the Swallows is still more so, the first quill being longest, and the rest rapidly diminished in length, Fig. 22. In the Lark, Fig. 23, it is doubly pointed, as it were, the inner secondaries being much elongated.

Fig. 21.

Fig. 22.

Fig. 23.

The *Tail* may be extremely short, short, moderate, long, extremely long, and of all intermediate gradations; even at the end, Fig. 24; rounded, graduated, or wedge-shaped, Fig. 25; tapering, pointed, emarginate, Fig. 26; or forked, Fig. 27. The number of its quills varies from eight to

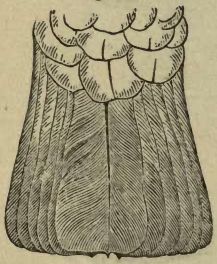
twenty or more, but in by far the greater proportion of birds is twelve.

Fig. 25.

Fig. 26.

Fig. 27.

Fig. 24.



As great importance is justly attributed to the *Digestive Organs*, which vary much in form in the different tribes, and as I have always given the characters of those parts among those peculiarly distinctive of the orders, families, and genera, it is necessary here to say a few words respecting them. The *gullet* or *œsophagus* is that part which extends in the form of a tube from the mouth to the stomach. It is often of nearly uniform width, but sometimes dilated into a crop. The *stomach* is a roundish or oblong sac, having three coats, the outer muscular, the next thin and dense, the inner usually membranous, dense, and rugous or wrinkled. The *intestine* is an elongated tube, wider in its first fold, which is named the duodenum, towards the end having two appendages, named cœca, sometimes very small, sometimes

very large, and sometimes wanting, and at the extremity dilated into a globular or oblong sac named the *cloaca*.

Fig. 28.

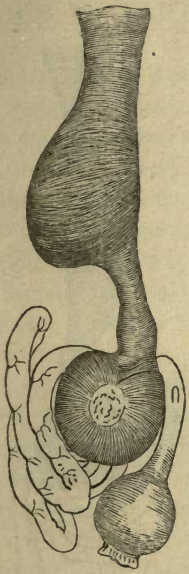
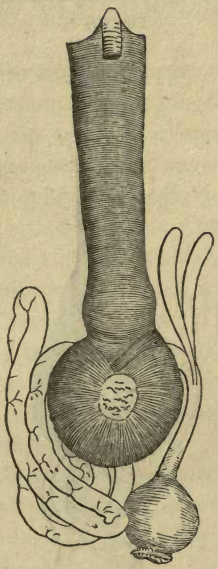


Fig. 29.



In Fig. 28, which represents the digestive organs of a hawk, the *œsophagus* is wide, and dilated into a crop, then narrowed, with the *proventriculus*, or glandular lower part, moderate; the *stomach* is rather large, round, with the muscular coat very thin, the tendons roundish; the *intestine* rather short and wide, the *cœca* very small, the *rectum* or space between the cœca and the end short, and dilated into a globular *cloaca*.

In Fig. 29, that of the digestive organs of an owl, the œsophagus is very wide and nearly uniform, without crop; the stomach extremely large and thin; the intestine of moderate length and width; the cœca large; the cloaca globular.

In the Kingfisher, Fig. 30, the œsophagus is rather wide and tapering, the proventriculus moderate; the stomach very large and thin; the intestine very long and slender, without cœca; the cloaca globular.

Fig. 30.

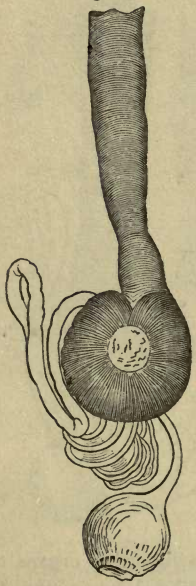
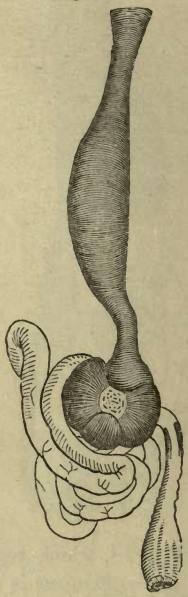


Fig. 31.



In the Finch, Fig. 31, the œsophagus is of moderate width, with a slight crop or dilatation on one side; the proventriculus bulbiform; the stomach roundish, with its muscular coat thick and divided into lateral and inferior muscles; the intestine of moderate length and width; the cœca very small; the cloaca oblong.

After opening up a few birds, and inflating the alimentary canal, the student will readily understand all the terms used in the description of these parts.

ORDER I. RAPTRICES. PLUNDERERS.

Bill cerate at the base, with the tip of the upper mandible elongated, tapering, and decurved. Tongue short, fleshy, concave above, with the tip rounded or emarginate; œsophagus very wide; stomach large, roundish, with the muscular coat thin, the epithelium soft; intestine of moderate capacity, being either of ordinary length and width, or very long and narrow; cloaca globular, and very large. Trachea nearly uniform, adpressed, with a single pair of inferior laryngeal muscles, or none. Eyes and apertures of ears generally large. Feet with four toes, which are placed in the same plane, padded and scabrous beneath; claws long, curved, and acuminate. Plumage full, down copious; wings large.

Birds of this order occur in all countries, and are characterized by their rapacious habits, solitary disposition, great quickness of sight, and powerful flight. They may be arranged into three families: VULTURINÆ, FALCONINÆ and STRIGINÆ, representatives of all of which occur in Britain. Of the first, however, only a single individual is recorded as having been obtained in England. But, of the second, nineteen, and of the third ten species, belong to our Fauna.

FAMILY I. VULTURINÆ. VULTURINE BIRDS, OR VULTURES.

Body robust; neck somewhat elongated; head of moderate size, or rather small, ovato-oblong. Bill of mode-

rate length, generally stout, sometimes rather slender; upper mandible cerate, compressed, with the tip elongated, decurved, rather obtuse, thin-edged; lower mandible rather slender, with the tip rounded and thin-edged. Tongue concave above, or induplicate, with the tip rounded or slightly emarginate, and horny beneath; œsophagus very wide, dilated into a most capacious crop; proventriculus wide; stomach large, thin, or moderately muscular, with a soft rugous epithelium; intestine of moderate length and width; cœca minute or wanting. Trachea considerably flattened, somewhat tapering, and composed of slender rings; inferior larynx much flattened, its last entire ring without septum; bronchi partly membranous; no inferior laryngeal muscles, the contractors terminating in the sterno-tracheal. Eyes of moderate size. Apertures of ears rather small and simple. Nostrils oblong, large, or of moderate size. Tarsus stout, bare, shorter than the middle toe, which is very long, hind toe small, second a little shorter than fourth; anterior toes connected by basal webs; claws large, moderately curved, acute. Head and part of neck destitute of feathers; but more or less covered with down or hairs; plumage full, rather compact; feathers generally ovate, those on the neck lanceolate; wings very long, broad, with the third, fourth, and fifth quills longest; tail of moderate length, with from twelve to sixteen feathers.

The Vulturine Birds inhabit the tropical and warmer temperate regions of both continents, seldom extending into the colder. They feed on animal substances, recent or putrid. Some of the larger species capture their prey by grasping, but others, having the claws less curved, employ the bill, or are content with carcasses. They descry their food from great distances, soar to a vast height, sail in circles, fly sedately, but with considerable speed, and are gregarious on occasion, some of the smaller species being habitually so. Undigested substances are dis-

gorged in pellets. They nestle on the ground or on rocks, forming a rude nest, and laying from two to four ovate or oblong eggs. The young, at first covered with down, remain until fully fledged.

Only a single individual of one of the smaller species has been shot in Britain.

GENUS I. NEOPHRON. NEOPHRON.

Bill nearly as long as the head, straight, slender, slightly compressed; upper mandible cerate to beyond the middle, with the dorsal line nearly straight, the tip decurved and pointed; lower mandible with the angle long and narrow, the dorsal line convex and short, the sides nearly erect, the tip obtuse. Nostrils large, oblong, medial. Eyes and auditory apertures of moderate size. Feet rather short and stout; tarsus roundish, with small angular scales; toes scutellate only toward the end, the first very small, the third very long, the second shorter than the fourth; the anterior toes webbed at the base. Claws rather long, arched, moderately compressed. Fore part of head and throat without feathers, but with scattered downy or bristly plumelets; plumage full; wings very long and broad, with the first quill short, the third longest; tail of moderate length, much rounded, of fourteen feathers. This genus belongs to Asia, Africa, and Southern Europe.

1. Neophron Percnopterus. White Neophron.

Adult male and female with the plumage white, excepting the primary quills and basal part of the secondaries, which are black. Young dark brown, patched with brownish-yellow; subsequently of the latter colour.

Male, 27, . . , 18, $2\frac{1}{2}$, $3\frac{1}{4}$, 3, $\frac{11}{12}$. Female somewhat smaller.

Generally distributed in Africa, Asia, and the south of Europe. Feeds chiefly on carrion, offal, and refuse, but attacks lizards, serpents, and small quadrupeds. In October 1825, a young individual was killed in Somersetshire, and was obtained by the Rev. A. Mathew of Kilve, who lent it to Mr Selby, by whom it has been figured and described in his Illustrations. Another individual was seen in the neighbourhood a few days.

White Vulture, Brown Vulture. Pharaoh's Chicken.

Vultur Percnopterus, Gmel. Syst. Nat. i. 249. Adult. Vultur fuscus, i. 248, Young.—Cathartes Percnopterus, Temm. Man. d'Ornith. i. 8; iii. 6.—Neophron Percnopterus, White Neophron, MacGillivray, Brit. Birds, iii. 166.

FAMILY II. FALCONINÆ. FALCONINE BIRDS, OR HAWKS.

Body robust, moderate, or slender; neck short; head rather large, roundish, little convex above. Bill short, stout, compressed toward the end; upper mandible cerate, with the edges sharp, and a sinus or notch near the tip, which is elongated, decurved, somewhat trigonal, acute; lower mandible with the angle wide, the dorsal line convex, the edges sharp and decurved or emarginate close to the rounded tip. Tongue fleshy, deeply emarginate and papillate at the base, with the sides nearly parallel, the tip rounded and horny beneath; œsophagus very wide, dilated into a large crop; proventriculus wide; stomach large or of moderate size, roundish, with the muscular coat thin, the epithelium soft, and more or less rugous; intestine generally rather short and of moderate width, sometimes very long and narrow, being in either case of moderate capacity; cœca extremely small, sometimes wanting; cloaca large and globular. Trachea considerably flattened, of slender rings; inferior larynx with a single pair of muscles, and the last entire ring partitioned. Eyes large, lateral, somewhat inclined forwards; both eyelids equally mobile. Nostrils small or of moderate size, varying in figure. Apertures of ears rather large, simple. Legs very muscular; tarsus short or of moderate length; toes four, the first large and stout, the third long, the second larger than the fourth, the anterior somewhat webbed at the base, all scutellate toward the end, padded and papillate beneath; claws

long, curved or arched, tapering, very acute. Plumage generally full; down very soft and copious; wings large, of moderate length or very long; tail of twelve feathers. The wings and tail vary extremely in length and form. The bill and feet also present various modifications.

Falconine Birds are met with in all climates. They prey on animals of various kinds, which they pursue on wing, and seize with their feet, thrusting into them their long acuminate claws. The feathers, hair, and bones of their victims are disgorged in pellets. Their senses of sight and hearing are very acute, their flight powerful. They are generally incapable of walking, but perch with ease, and when roosted keep the body nearly erect. Although solitary, some species congregate occasionally when food is abundant. Their cries are loud and shrill. They nestle on rocks, on trees, or on the ground, forming a rude nest, or sometimes occupying that of another bird, and lay from two to eight eggs, the larger species having fewer than the smaller. The young, which are at first covered with light-coloured down, remain until fully fledged. The colours of the plumage change, and are not perfected until the third or fourth year. Sometimes also the female differs in colour from the male. The males are always much smaller than the females. When the sexes differ in colour, the young resemble the female, which is generally darker and more variegated than the male.

GENUS II. BUTEO. BUZZARD.

Bill short, compressed toward the end, with the upper outline sloping a little to the edge of the cere, then decurved, the sides rapidly sloping, the edges with a distinct rounded festoon. Tongue short, rather narrow, concave above, with the tip rounded and emarginate; crop very large; stomach large, round, a little compressed, its coats thin; pylorus with three or four prominent rugæ; intestine of moderate length, rather wide; cœca very small. Nostrils elliptical, oblique.

Eyes large, with a broad superciliary ridge. Head large, broad, flattened. Feet short, robust; tarsus feathered in front half-way down, anteriorly and posteriorly scutellate, or feathered in its whole length; toes of moderate length, rather stout, all scutellate toward the end, the first and second stoutest; claws long, well-curved, tapering, very acute, flat beneath. Plumage full, soft. Wings long, broad, rounded, the fourth quill longest, the outer four with the inner web abruptly narrowed. Tail of moderate length, or rather long, broad, and rounded.

Among the least active birds of this family, but having a strong, buoyant flight. They sail in circles, mounting to a great height; but when searching for food, fly low over the fields. They seldom pursue birds on wing; feed on quadrupeds, birds, reptiles, insects, and worms.

2. Buteo fuscus. Brown Buzzard.

Tarsi bare in their lower part. Male with the upper parts deep brown, the feathers margined with paler, the lower parts yellowish-white, with longitudinal oblong brown spots, the tail with numerous brown and pale bands. Female deep brown above and beneath, the throat streaked with whitish, the breast spotted with the same. Young of a lighter brown, with the feathers margined with light red.

Male, 19, 49, $16\frac{1}{2}$, $1\frac{7}{12}$, $2\frac{10}{12}$, $1\frac{7}{12}$, $\frac{10}{12}$. Female, 21, 50.

Generally distributed in Britain. Occurs also in Ireland. Feeds on small quadrupeds, birds, lizards, beetles, larvæ, and even earth-worms. In its soaring flight it greatly resembles the Golden Eagle, to which it is closely allied. Nestles in trees, and in rocky places on the ground. Eggs three or four, broadly elliptical, $2\frac{1}{4}$ inches in length, $1\frac{10}{12}$ in breadth, dull white, spotted and patched with yellowish-brown.

Glead. Glade. Kite. Puttock. Common Buzzard.

Falco Buteo, Linn. Syst. Nat. i. 127.—Falco Buteo, Temm. Man. d'Orn. i. 63; iii. 35.—Buteo fuscus, Brown or Common Buzzard, MacGillivray, Brit. Birds, iii. 133.

3. Buteo lagopus. Rough-legged Buzzard.

Tarsi feathered to the toes. Upper parts brown, the head and neck streaked with white; lower parts yellowish-white, with a broad patch of brown on the breast; the tail white for more than half its length. Old birds almost entirely choco-

late brown, the forehead and base of the tail white, the latter barred with white and brown.

Male, 21, 51, 17, $1\frac{4}{12}$, $2\frac{1}{2}$, $1\frac{3}{12}$, $\frac{11}{22}$. Female, $23\frac{1}{2}$, 56.

Easily distinguished, being the only British Falconine Bird, except the Golden Eagle, that has the tarsi feathered. It exhibits great variation in the tints of the plumage. Black or dark brown individuals, occasionally seen in America, and supposed to be adult or old, have never been observed with us; but one, shot in Dumfriesshire in March 1840, had a great number of young feathers of a blackish-brown colour, and would have been entirely of that tint, had the moult been completed. A winter visitant in Britain and Ireland.

Rough-legged Falcon.

Falco lagopus, Gmel. Syst. Nat. i. 260.—Falco lagopus, Temm. Man. d'Ornith. i. 65; iii. 37.—Buteo lagopus, Rough-legged Buzzard, MacGillivray, Brit. Birds, iii. 193, 736.

GENUS III. AQUILA. EAGLE.

Bill shorter than the head, very high, gradually compressed from the base; upper mandible with the dorsal line nearly straight along the cere, the ridge broad and convex, the edges with a slight festoon, the tip prolonged, decurved, trigonal, acute; lower mandible with the angle of moderate width and rounded, the dorsal line convex, as are the sides, the tip rounded. Mouth wide; tongue fleshy, deeply emarginate and papillate at the base; concave above, with the sides nearly parallel, the tip rounded; œsophagus very wide, dilated into a large crop; stomach large, roundish, its muscular coat thin, the epithelium soft; intestine rather short, of moderate width, the duodenum forming a single loop; cæca very small; cloaca very large and globular. Nostrils broadly elliptical, oblique. Eyes large, with a broad projecting superciliary ridge. External aperture of ear large, roundish. Head large, roundish, flattened above; neck rather short; body very robust. Feet of moderate length, very stout; tarsus very short, thick, feathered to the tarso-digital joint; toes of moderate length, stout, the first and second shortest and thickest, the third next in length, but the most slender, and connected with the fourth by a pretty large web, all scutellate toward the end; claws strong, curved, tapering, laterally flattened, concave beneath, very

acute. Plumage compact, full. Wings very long, broad, rounded, the first and eighth quills about equal, the fourth longest; the first six abruptly cut out on the inner web, and narrowed on the outer. Tail of moderate length, or rather long, broad, rounded, and extending considerably beyond the wings.

The Eagles are powerful and vigorous birds, rather heavy and somewhat slow, like the Buzzards, to which they are nearly allied. They sail in circles, ascend to a vast height, but when searching for food fly low over the ground. They prefer mountainous regions, and are generally distributed.

4. Aquila Chrysaetus. Golden Eagle.

Tail slightly rounded, longer than the wings; the general colour of the plumage brown; the feathers of the head, neck, tarsus, and inner part of the tibia, light yellowish-brown; the tail brownish-black, more or less variegated with grey. Young dark brown, with the bases of all the feathers whitish; the basal half of the quills and larger wing-coverts, and three-fourths of the tail, white; inner tibial and tarsal feathers white. As the bird advances in age, the white of the basal portion of the feathers diminishes, until the quills and tail ultimately become dark brown, irregularly banded and mottled with grey.

Male, 33, 72, 24, $2\frac{8}{12}$, 4, $2\frac{5}{12}$, $1\frac{1}{12}$. Female, 37, 87.

Not uncommon in many parts of the Highlands and Hebrides; rare in Shetland and Orkney; does not breed south of the Clyde and Tay, but is occasionally seen in various parts of England. Resident also in Ireland. Nestles on rocks, forming a large nest of sticks, heath, seaweeds, wool, and other substances, and lays two eggs, sometimes one, very rarely three, broadly ovate, 3 inches long, $2\frac{1}{8}$ in breadth, white, clouded and spotted with light brown, or white with a few reddish dots. The food of this species consists of the flesh of hares, rabbits, lambs, fawns, moles, grouse, ptarmigans, partridges, curlews, plovers, and other species; besides, occasionally, carrion of various kinds.

Black Eagle. Brown Eagle. Ring-tailed Eagle.

Falco Chrysaetos and F. fulvus, Linn. Syst. Nat. i. 125, Adult and Young.—Falco fulvus, Temm. Man. d'Ornith, i. 38. —Aquila Chrysaetus, Golden Eagle, MacGillivray, Brit. Birds, iii. 204.

Two trapped head of Glenbruchel in Spring 1882 - another seen.

GENUS IV. HALIAETUS. SEA-EAGLE.

Bill nearly as long as the head, very high, gradually compressed toward the end, with the upper outline nearly straight to the edge of the cere, the sides flattish and nearly erect; upper mandible with the edges slightly festooned, the tip elongated, trigonal, decurved, acute; lower mandible scarcely a third of the height of the upper, with the angle long and of moderate width, the dorsal line nearly straight, the tip rounded. Mouth wide; tongue fleshy, deeply emarginate and papillate at the base, concave above, with the sides nearly parallel, the tip rounded; œsophagus very wide, with a very large crop; proventriculus wide; stomach large, roundish, with its muscular coat thin; intestine very long and narrow, duodenum extremely elongated, and disposed into a coil of several folds; cœca very small; cloaca very large and globular. Nostrils oblong, oblique. Eyes large, with projecting superciliary ridges. Aperture of ear rather large and roundish. Head large, roundish-ovate; neck of moderate length; body robust. Feet short, very strong; tarsus very short, feathered half-way down, then scaly, with anterior and posterior scutella; toes very stout, scutellate toward the end, the first and second strongest, and about equal, the fourth a little longer than the second, the third much longer; claws very large, well curved, flattened on the sides, concave beneath, acute, the first and second largest. Plumage compact and full. Wings very long, broad, rounded, the first a little shorter than the seventh, the third and fourth longest; the first five with the inner web abruptly cut out. Tail of moderate length, broad, rounded, extending considerably beyond the wings.

The Sea-Eagles are birds of large size, but less bold and vigorous than the Eagles properly so called. Fish forms a great portion of their food. They also feed on carrion, and occasionally attack living animals, sometimes even those of considerable size. They sail in circles, ascending to a vast height, and in habits generally differ little from the Eagles.

5. Haliaetus Albicilla. White-Tailed Sea-Eagle.

Adult with the bill, feet, and irides yellow; the plumage

of the head, neck, and part of the back and breast, greyish-yellow, or pale brown tinged with grey; of the hind part of the back darker; the abdomen and legs chocolate-brown; the quills brownish-black, the tail white. Individuals of a pale greyish-purple, in parts approaching to ash-grey, are seen, especially in captivity. Young with the bill brownish-black, the irides brown, the feet yellow; the plumage pale brown, with elongated dark brown spots, the bases of all the feathers brownish-white; the tail dark brown, irregularly variegated with white. At the first moult the light brown becomes darker, and the proportion of white is somewhat diminished, unless on the tail, where it is on the contrary increased. At each successive moult, the bill assumes a lighter tint, passing through shades of brown, until it ultimately becomes pale yellow; the iris undergoes a similar change; the proportion of white at the base of the feathers diminishes, the dark part enlarges in extent, but becomes paler; the tail-feathers, at first freckled with white, or brownish-white, become patched, and finally, at the age of six or seven years, pure white.

Male, 36, 72, 24, $3\frac{5}{12}$, 4, 3, $1\frac{8}{12}$. Female, 40, 80.

Common in the Hebrides, on the Northern and Western coasts of the Highlands. Rare in Shetland and Orkney, occurs in Galloway. Not uncommon in some parts of Ireland. Breeds on cliffs on the sea-shore, as well as in the interior, forming a very bulky nest of sticks, twigs, heath, often dry sea-weeds, as well as tufts of grass, wool, and other materials. The eggs, two in number, are broadly ovate, pure white, or yellowish-white, generally with some pale red dots or spots chiefly at the larger end. Its food consists of carrion, dead fish, small quadrupeds, young sea-birds, grouse, and other animals. Although less destructive to living animals than the Golden Eagle, it sometimes carries off young lambs.

Cinereous Eagle. Grey Eagle. Sea Eagle. Erne. Osprey.

Vultur Albicilla, Linn. Syst. Nat. i. 123.—Falco Albicilla, Temm. Man. d'Ornith. i. 49.—Haliaetus Albicilla, White-tailed Sea-Eagle. MacGillivray, Brit. Birds, iii. 221.

GENUS V. PANDION. OSPREY.

Bill shorter than the head, stout, high, gradually compressed; upper mandible with the dorsal line a little declinate and slightly convex, the sides rapidly sloping and convex, the edges festooned, the tip elongated, decurved, trigonal, very acute; lower mandible with the angle short and rather

wide, the dorsal line convex, the tip obliquely truncate and rounded. Mouth rather wide; tongue short, emarginate and finely papillate at the base, concave above, rounded; œsophagus very wide, with a large crop; proventriculus wide; stomach large, round, with the muscular coat thin; intestine extremely long and slender, forming very numerous convolutions; cœca very short; cloaca very large and globular. Nostrils oblong, oblique. Eyes of moderate size, without projecting superciliary ridge. Aperture of ear rather small, and roundish. Head ovate, of moderate size; neck of moderate length; body compact. Feet very robust; tibiæ long and muscular; tarsi very short, thick, covered all round with imbricated scales, of which the posterior are pointed; toes thick, strong, free; the fourth versatile and longer than the second, all with a few broad scutella at the end, the scales on the sides, and especially on the lower surface, rising into a conical central point, some of them on the inner side of the outer toe being so prominent as to resemble short spines; claws long, rather slender, well curved, rounded above and beneath, with the sides flattened, and the tip very acute; those of the hind and outer toes largest. Plumage compact; the feathers on the head and neck tapering, on the body broad and rounded; on the tibia short, slender, and rather soft, without the outer elongated tuft seen in the Eagles, Buzzards, and most other genera. Wings extremely long, comparatively narrow, rounded, with the first quill longer than the fifth, the third longest. Tail rather long, a little rounded, shorter than the folded wings.

This genus is easily distinguished by the extreme elongation of the intestine, the convexity of the claws beneath, the want of a tuft of feathers on the outer side of the tibia, the conical form of the scales on the lower surface and sides of the toes, and the great length of the wings. The Ospreys feed chiefly on fish, which they seize as they approach the surface.

6. Pandion Haliaetus. Fishing Osprey.

Adult with the bill bluish-black, the cere light blue, the feet pale greyish-blue; the plumage above deep umber-brown, the upper part of the head and neck white, the middle of the

crown dark brown; a broad band of blackish-brown, on the cheeks and neck; the lower parts white, the neck streaked with brown. Young with the feathers of the upper parts deep brown, terminally margined with reddish-white.

Male, 24, 64, 20, $1\frac{10}{12}$, $2\frac{1}{4}$, $1\frac{9}{12}$, $1\frac{7}{12}$. Female, 26, 68.

Generally dispersed in England and Scotland, but rare, and apparently migratory. Breeds on some of the Scottish lakes, as Loch Lomond and Loch Awe. Feeds exclusively on fishes, which it captures by plunging after them on their approaching the surface. Its flight is sedate, buoyant, and graceful, and it hovers over the water with an undulatory motion of the wings. The nest, which is bulky, is placed on a rock, old building, or tree; and the eggs, three or four in number, are roundish, white, with large patches of brown, $2\frac{4}{12}$ long, $1\frac{10}{12}$ broad. The intestine of a male examined by me was eleven feet 3 inches long, its widest part $\frac{3}{12}$ across, the narrowest $\frac{2}{12}$. The œsophagus and stomach being $11\frac{1}{2}$ inches, the whole length of the alimentary canal was 12 feet, $2\frac{1}{2}$ inches.

Fishing Eagle. Fish Hawk. Bald Buzzard.

Falco Haliætus, Linn. Syst. Nat. i. 129.—Falco Haliætus, Temm. Man. d'Ornith. i. 47; ii. 25.—Pandion Haliaetus, Fishing Osprey, MacGillivray, Brit. Birds, iii. 239.

GENUS VI. PERNIS. BEE-HAWK.

Bill shorter than the head, somewhat broader than high at the base, compressed toward the end, strong; upper mandible decurved from the base, with the sides convex, the edges with a very slight festoon, the tip descending, slender, acute; lower mandible with the angle of moderate length, broad, and rounded, the dorsal line convex, the tip rounded. Mouth rather wide; tongue short, with the base concave and papillate, the upper surface deeply concave, the sides nearly parallel, the tip rounded but emarginate; œsophagus very wide, dilated into a very large crop; proventriculus wide; stomach large, roundish, its muscular coat very thin; intestine of moderate length, rather wide; no cœca; cloaca elliptical, very large. Nostrils linear-oblong, oblique. Eyes rather large; eyelids destitute of ciliary bristles: the supraocular ridge small. Aperture of ear large, transversely elliptical. Head ovate, flattened above, of moderate size; neck rather short; body rather elongated, moderately full. Legs short,

robust; tarsi very short, strong, roundish, feathered half-way in front, then covered with large hexagonal scales; toes of moderate length, strong, the first stoutest, the fourth most slender, and connected with the third by a basal web, all scutellate at the end, and covered beneath with roundish, hard papillæ; claws long, arcuate, rather slender, concave beneath, acute, those of the first and second toes nearly equal and strongest, the third longest. Plumage compact, soft; feathers on the fore part of the head, cheeks, loral space, and chin, very small, ovate-oblong, obtuse, compact; wings very long, broad, rounded, with the third quill longest, the outer five quills abruptly cut out on the inner web; tail long, broad, even or slightly emarginate.

This genus, of which the species are not numerous, and only one British, is distinguished from all others by the imbricated, squamiform feathers on the parts about the base of the bill. It seems closely allied to Milvus, Buteo, and Pandion.

7. Pernis apivora. Brown Bee-Hawk.

Tail with four broad and numerous small dusky bands; wings with two similar bands. Adult male with the anterior part of the head brownish-grey, the upper parts deep brown, the throat white, with longitudinal dark lines, the rest of the lower parts white, with broad bands and spots of brown. Young male with the head brown, anteriorly tinged with grey, the upper parts deep brown, the throat light reddish, with longitudinal dark lines, the rest of the lower parts deep brown, with darker longitudinal lines. Female with the forehead bluish-grey, the upper parts deep brown, the lower pale yellowish-red, with large reddish-brown spots. Young with the head white, spotted with brown, the upper parts deep brown, the feathers broadly edged with light red, the lower parts light yellowish-red, spotted with brown.

Male, $24\frac{1}{2}$, 52, $16\frac{3}{4}$, $1\frac{4}{12}$, $1\frac{11}{12}$, $1\frac{9}{12}$, $1\frac{3}{12}$.

Only five individuals recorded as killed in Scotland, one in Braemar, one at Dunkeld, one near Stirling, one at Chatelherault in the parish of Hamilton, the other at Drumlanrig in Dumfriesshire. It becomes more frequent as we advance southward, but is still of rare occurrence, and appears to be a summer visitant, all the specimens whose dates of capture or death are recorded, having been obtained at that season or in

autumn. A few instances of its breeding in England are known; and one has occurred in Scotland, in the woods of Abergeldie, in Aberdeenshire. The eggs are broadly elliptical, $2\frac{1}{2}$ inches long, $1\frac{6}{12}$ broad, white, blotched with brown. Remarkable for its predilection for the larvæ of bees and wasps.

Honey Buzzard.

Falco apivorus, Linn. Syst. Nat. i. 130.—Falco apivorus, Temm. Man. d'Ornith. i. 67.—Pernis apivora, MacGillivray, Brit. Birds, iii. 254.

GENUS VII. MILVUS. KITE.

Bill shorter than the head, somewhat broader than high at the base, much compressed toward the end, strong; upper mandible with the dorsal line decurved from the base, the sides rapidly sloping, the edges with a slight festoon, the tip decurved, trigonal, tapering, rather blunt; lower mandible with the angle large and wide, the dorsal line slightly convex, the sides convex, the tip rounded. Mouth wide; tongue short, sagittate and papillate at the base, concave above, rounded and emarginate; œsophagus wide, about the middle dilated into a moderate crop; proventriculus wide; stomach roundish, its muscular coat thin; intestine of moderate length, slender; cœca very small; cloaca very large and globular. Nostrils rather small, elliptical, oblique. Eyes large, superciliary ridge prominent. Aperture of ear large, roundish. Head of moderate size, ovate, rather flattened above; neck short; body moderately full. Legs short, robust; tarsi very short, roundish, feathered for more than a third, scutellate in front; toes of moderate length, strong, the first and second nearly equal, the fourth more slender and connected by a basal web with the third, all scutellate above nearly in their whole length; claws long, well curved, tapering, compressed, very acute, the first and second largest. Plumage full and soft; feathers of the head, neck, and breast pointed; wings extremely long, broad, narrow, the first quill short, the third longest; tail very long, broad, forked or emarginate.

Milvus is distinguished from Pernis by the still more elongated wings and tail, the bristly covering of the loral space, and the more curved claws. The kites are remark-

able for their gliding and buoyant flight. They are not numerous, and only one species occurs in Britain.

8. Milvus regalis. Red Kite.

Male with the upper parts reddish-brown, marked with longitudinal blackish-brown streaks, the lower parts light brownish-red, with narrower dusky streaks. Female with the head and upper part of the neck greyish-white, streaked with dusky; the other parts as in the male. Young of a duller brownish-red, with the central dark markings of the feathers broader. Tail deeply emarginate.

Male, 25, 61, 19, $1\frac{6}{12}$, 2, $1\frac{7}{12}$, $\frac{1}{12}$. Female, 27, 63.

The Kite is distinguished from the other native birds of this family by the superior elegance of its buoyant flight, as well as by its elongated wings, and deeply emarginate tail. It is generally distributed, but of rare occurrence in any district. When searching for food it moves along at a moderate height, wheeling and gliding in an undulatory course, and proceeding at intervals with motionless wings. It preys on small quadrupeds, reptiles, insects, occasionally birds, and sometimes eats of carrion of various kinds. The nest, which is bulky, is placed in the fork of a tree. The eggs, two or three, are of a short oval form, $2\frac{2}{12}$ inches in length, $1\frac{9}{12}$ in breadth, white, with a few reddish-brown dots or spots.

Common Kite. Gled, Glead. Red Gled. Salmon-tailed Gled or Kite. Crotched-tailed Puttock.

Falco Milvus, Linn. Syst. Nat. i. 126.—Falco Milvus, Temm. Man. d'Ornith. i. 59.—Milvus regalis, Red Kite, MacGillivray, Brit. Birds, iii. 266.

GENUS VIII. NAUCLERUS. SWALLOW-KITE.

Bill short, broader than high at the base, much compressed toward the end, of moderate strength; upper mandible with the dorsal line declinato-decurvate from the base, the sides nearly flat, the edges with a slight festoon, the tip declinate, slender, acute; lower mandible with the angle very wide, the dorsal line slightly convex, the edges much decurved toward the end, which is rounded. Tongue somewhat decurved, emarginate, and finely papillate at the base, flat above, its tip narrow and acutely emarginate; œsophagus of nearly uniform width, being destitute of crop, and thus

resembling that of the Owls; stomach very large, round, its muscular coat very thin; intestine short and rather wide; no cœca; cloaca large, globular. Nostrils round, with a central papilla. Eyes large. Aperture of ear roundish and rather large. Head roundish, flattened above; neck short; body compact. Feet short, tarsus very short, robust, covered all round with scales: toes of moderate size, scutellate above; claws rather long, well curved, slender, acuminate. Plumage blended, glossy; wings extremely elongated, rather narrow, pointed, the third quill longest; tail extremely long, very deeply forked.

9. Nauclerus furcatus. White-headed Swallow-Kite.

Head, neck, and lower parts white; back, wings, and tail black; bill bluish-black, feet greenish, claws flesh-coloured.

Male, 22, 47, 18, $1\frac{2}{12}$, $1\frac{1}{4}$, $\frac{11}{12}$, $\frac{7}{12}$.

This bird is distinguished from all the British falconine species by its very long and deeply forked tail, as well as by its peculiar colouring. Its proper country is the tropical and temperate regions of America. Two individuals, however, are recorded as having been met with in Britain: one killed at Ballychulish in Argyleshire, in 1772; the other caught at Shawgill in Yorkshire, in September 1805. Its flight is described as singularly beautiful, its motions astonishingly rapid. It generally feeds while on wing; and its food consists of grasshoppers, insects, small snakes, lizards, and frogs.

Swallow-tailed Hawk. Swallow-tailed Kite.

Falco furcatus, Linn. Syst. Nat. i. 129.—Falco furcatus, Audubon, Orn. Biog. i. 368; v. 371.—Nauclerus furcatus, Aud. Synop. 14.—Nauclerus furcatus, White-headed Swallow-Kite, MacGillivray, Brit. Birds, iii. 277.

GENUS IX. FALCO. FALCON.

Bill short, very strong, of nearly equal breadth and height at the base, moderately compressed toward the end; upper mandible with the dorsal line convex from the base, the sides convex, the edges with a medial festoon and an anterior angular process, the tip decurved, trigonal, acute; lower mandible with the angle wide and rounded, the dorsal line very convex, the edges involute, with a rounded notch on

each side near the tip, which is truncate. Mouth wide; tongue short, fleshy, sagittate and papillate at the base, concave above, with the sides nearly parallel, the tip rounded and emarginate; œsophagus wide, with a large crop; proventriculus wide; stomach large, round, its muscular coat very thin; intestine of moderate length and width; cloaca elliptical or globular, very large. Nostrils round, with a central papilla. Eyes large, with the superciliary ridge prominent. Aperture of ear round, rather large. Head large, round, flattened above; neck short; body compact, firm, muscular. Feet of moderate length, stout; tarsus short, rounded, covered with scales, of which the anterior are larger and somewhat hexagonal; toes strong, scutellate above, the first short, the third much longer than the fourth, which exceeds the second, and is connected by a basal membrane; claws long, well curved, flat beneath, tapering to a fine point. Plumage generally compact; feathers of the head short and narrow, of the back and breast ovate or oblong; wings very long and pointed, the second quill longest, the first little shorter, one or both having the inner web abruptly cut out; tail long, broad, rounded.

The Falcons, which are considered as the typical or pre-eminently characteristic birds of this family, are generally distributed. Being compact and muscular, they fly by regular beats, sailing little, and descend perpendicularly or obliquely on their prey, which they capture in the air as well as on the ground. Their food consists of small quadrupeds, birds of various kinds, reptiles, and insects. They breed on rocks, in trees, or on the ground, forming a bulky nest, and laying from three to six roundish or broadly ovate eggs, generally speckled or spotted with red or brown. The young are covered with thick white down. The males in this genus are much smaller than the females. Six species occur in Britain.

10. Falco Gyrfalco. The Gyrfalcon.

Adult of both sexes white, having the upper parts marked with semilunar or sagittiform dark grey spots; the bill light blue, the cere and feet pale yellow. Young brownish-grey above, spotted with yellowish or reddish-white, the tail with numerous light bars, which on the middle feathers are gene-

rally opposite, but sometimes alternate, the lower parts yellowish-white, longitudinally spotted with dusky.

Male, 21, . ., $15\frac{1}{2}$, $2\frac{1}{2}$, 2, 1. Female, $23\frac{1}{2}$, $51\frac{1}{4}$.

This species, the most powerful, and one of the most beautiful of its genus, has frequently been met with in various parts of Scotland as well as in England, although it can scarcely be considered as a permanent resident, there being no authentic account of its breeding with us. It occurs in Norway, Sweden, and several of the northern countries of Europe; in Iceland, Greenland, Labrador, and the fur countries of North America.

Jer Falcon. Jerkin. Iceland Falcon. Greenland Falcon.

Falco Gyrfalco and rusticolus, Linn. Syst. Nat. i. 130, 125.—Falco islandicus, Temm. Mann. d'Ornith. i. 17; iii. 9.—Falco Gyrfalco, Gyr Falcon, MacGillivray, Brit. Birds, iii. 284.

11. Falco peregrinus. Peregrine Falcon.

Wings when closed about half an inch shorter than the tail. Adult male with the head, hind neck, and a broad band on the cheeks, black, the upper parts deep bluish-grey, fading behind into ash-grey, and barred with greyish-black, the lower parts white, the breast and sides transversely spotted and barred with dusky. Female with the upper parts more dusky, the lower reddish-white, with larger markings. Young with the upper parts deep brownish-black, faintly spotted with reddish, each feather tipped with light red, the lower parts yellowish-white, with longitudinal dusky streaks.

Male, $16\frac{1}{2}$, $36\frac{1}{2}$, $12\frac{1}{4}$, $1\frac{1}{12}$, $1\frac{9}{12}$, 2, $\frac{9}{12}$. Female, $19\frac{1}{2}$, $42\frac{1}{2}$.

Equal in beauty of form, and little inferior in strength or spirit, the Peregrine Falcon is next in size to the Gyr Falcon, which it nearly equals in the estimation of those who train rapacious birds for the chase. Although nowhere very numerous, it is extensively distributed in Britain and Ireland. It preys upon ptarmigans, partridges, grouse, pheasants, mallards, teal, pigeons, gulls, puffins, auks, guillemots, rabbits, and young hares. Its flight is rapid, its course desultory, seldom in circles, although it sometimes hovers. It reposes on cliffs, whether on the coast or in the interior, and there nestles, laying three or four broadly elliptical eggs, 2 inches in length, $1\frac{7}{12}$ in breadth, dull light red, dotted and patched with darker red.

Blue Hawk. Grey Hawk. Hunting Hawk. Goshawk. Falcon. Common Falcon.

Falco peregrinus, Lath. Ind. Ornith. i. 33.—Falco pere-

grinus, Temm. Man. d'Ornith. i. 22; iii. 11.—Falco peregrinus, Peregrine Falcon, MacGillivray, Brit. Birds, iii. 294.

12. Falco Subbuteo. Hobby Falcon.

Wings when closed extending beyond the tail. Male with a black cheek-band, the upper parts greyish-black, the lower yellowish-white, with longitudinal brownish-black streaks, the lower tail-coverts and tibial feathers red. Female with the upper parts dark brown, the lower reddish-white, with broader dark brown markings, the lower tail-coverts and tibial feathers of a lighter red.

Male, 12, 26, 10, $\frac{9}{12}$, $1\frac{5}{12}$, $1\frac{4}{12}$, $\frac{5}{12}$. Female, 14, 28.

Of unfrequent occurrence in England, and not hitherto observed in Scotland. It preys upon small birds and insects, seems to prefer inland situations, and, according to Montagu, builds in trees, sometimes taking possession of a crow's deserted nest. The eggs, three or four in number, are broadly elliptical, bluish-white, blotched with greenish-brown, $1\frac{8}{12}$ inch long, $1\frac{2}{12}$ in breadth.

Falco Subbuteo, Linn. Syst. Nat. i. 127.—Falco Subbuteo, Temm. Man. d'Ornith. i. 25; iii. 12.—Falco Subbuteo, Hobby Falcon, MacGillivray, Brit. Birds, iii. 309.

13. Falco vespertinus. Orange-legged Falcon.

Wings when closed about the same length as the tail. Male with the plumage of a uniform deep greyish-blue, excepting that of the abdomen and legs, and the lower tail-coverts, which are bright yellowish-red; cere orange-red, feet reddish flesh-colour. Female with the upper part of the head and the hind neck yellowish-red, the back greyish-blue, barred with black, the tail bluish-grey with black bands, the lower parts light yellowish-red, with oblong brown spots. Young with the head reddish-brown, with black shaft-lines; the feathers of the back deep brown, edged with light red, the space about the eyes blackish, the lower parts yellowish-white, with longitudinal brown spots.

Male, 12, ..., 9, $\frac{9}{12}$, $1\frac{4}{12}$, $1\frac{1}{12}$, $\frac{6}{12}$. Female, 13, ..., $9\frac{1}{2}$.

Three individuals described by Mr Yarrell as having been obtained, in May 1830, at Horning in Norfolk, a female in Holkham Park; and, in 1832, another individual in the same county. Two obtained in Yorkshire, one in the county of Durham, and two more, one of which was kept for some time in the Menagerie of the Zoological Society, the other obtained near Devonport, are all that have been recorded. One also

has been killed in Ireland. It is said to be common in Russia, Poland, Austria, Tyrol, Switzerland, and the districts on the northern side of the Appenines.

Red-legged or Red-footed Falcon. Orange-legged Hobby.

Falco vespertinus, Linn. Syst. Nat. i. 129.—Falco rufipes, Temm. Man. d'Ornith. i. 33.—Falco vespertinus, Orange-legged Falcon, MacGillivray, Brit. Birds, iii. 313.

14. Falco Æsalon. Merlin Falcon.

The wings when closed about an inch and a half shorter than the tail, the inner webs of the first and second quills abruptly cut out toward the end. Male with the upper parts deep greyish-blue, each feather with a black central line, the tail barred with black, the lower parts light reddish-yellow, with oblong blackish-brown spots. Female with the upper parts greyish-brown, the shaft-lines darker, the tail barred with pale reddish, the lower parts yellowish-white, with large longitudinal markings. Young with the upper parts brown, spotted with pale red, the lower reddish-white, marked as in the female.

Male, 11, 26, $8\frac{1}{2}$, $\frac{9}{12}$, $1\frac{6}{12}$, $1\frac{1}{12}$, $\frac{6}{12}$. Female, $12\frac{1}{2}$, 29.

This, the smallest British species of the genus, is by no means uncommon in many parts of Scotland, where it remains all the year. It is also not unfrequent in the north of England, but in the middle and southern districts of that country occurs only in winter. It preys on small birds, such as larks, chaffinches, sandpipers, snipes, and plovers. Its nest, rudely constructed, is placed on the ground among heath. The eggs, three or four, are very similar to those of the kestrel, being broadly elliptical, about $1\frac{7}{12}$ inch in length, $1\frac{2}{12}$ in breadth, light red, or reddish-white, confusedly dotted, spotted, or blotched with dull red.

Stone Falcon. Rock Hawk. Sparrow Hawk.

Falco Litho-falco and Æsalon, Lath. Ind. Ornith. i. 47.—Falco Æsalon, Temm. Man. d'Ornith. i. 27 ; iii. 13.—Falco Æsalon, Merlin Falcon, MacGillivray, Brit. Birds, iii. 317.

15. Falco Tinnunculus. Kestrel.

The wings when closed about two inches shorter than the tail. Male with the head, hind-neck, rump, and tail, light greyish-blue, the latter with a broad subterminal black bar; the back and wing-coverts pale red, with oblong or triangular dark spots; the lower parts light yellowish-red, with longitudinal linear and guttiform spots. Female with all the upper

parts light red, with transverse spots of dark brown, the lower parts paler, with oblong dark markings. Young similar to the female, but with the spots larger.

Male, $13\frac{1}{2}$, 28, $9\frac{3}{4}$, $\frac{9}{12}$, $1\frac{1}{2}$, 1, $\frac{7}{12}$. Female, $14\frac{1}{2}$, 30.

The Kestrel is generally distributed, and in most districts not uncommon, so that it appears to be the most numerous of our rapacious birds. It is especially remarkable for its habit of hovering over the fields when searching for its prey, which consists chiefly of mice, arvicolæ, and shrews, in looking for which among the grass it balances itself, with a quivering motion of the wings, at the height of twenty or thirty feet. It occasionally destroys birds also, especially young larks, thrushes, and lapwings, and feeds on beetles and other Coleoptera, as well as earth-worms and lizards. At the commencement of the breeding season it is remarkably vociferous. It often takes possession of the deserted nest of a crow or magpie, but in rocky tracts breeds on cliffs or craggy banks. The eggs, which vary from three to five, are broadly elliptical or roundish, pale orange-red, or reddish-white, confusedly dotted or patched all over with dull brownish-red, and average $1\frac{2}{3}$ inch in length, $1\frac{1}{4}$ in breadth.

Kestril, Kastril, Kistril. Windhover. Stonegall, Steingall, Stannel. Keelie. Sparrow Hawk.

Falco Tinnunculus, Linn. Syst. Nat. i. 127.—Falco Tinnunculus, Temm. Man. d'Ornith. i. 29.—Falco Tinnunculus, Kestrel, MacGillivray, Brit. Birds, iii. 325.

GENUS X. ACCIPITER. HAWK.

Bill short, stout, compressed toward the end; upper mandible with the dorsal line decurved from the base, the sides sloping and somewhat convex, the edges with a prominent broad lobe beyond the middle, the tip decurved, trigonal, acute; lower mandible with the angle wide and rounded, the dorsal line convex, the edges inflected, the tip obliquely truncate and rounded. Mouth rather wide; tongue short, fleshy, concave above, rounded and slightly emarginate; œsophagus wide, dilated into a large crop; stomach roundish or oblong, its muscular coat very thin, the inner smooth and soft; intestine rather short and of moderate width; cœca very small; cloaca globular. Nostrils elliptical, oblique. Eyes rather large, with the superciliary ridge prominent. Aperture of the ear roundish, rather large. Head of mode-

rate size, roundish; neck short or of moderate length; body very slender behind. Feet of moderate length; tarsi moderate, or rather long, slender, feathered for at least a third, broadly scutellate before and behind; toes slender, scutellate above, with a large fleshy knob beneath on the last joint of each, and one at the next joint of the outer two; the first and second nearly equal; the third much longer, and connected with the fourth by a basal web; claws long, well curved, compressed, tapering to a fine point. Plumage compact above, blended beneath; wings of moderate length, very broad, much rounded, the fourth and fifth quills longest; tail long, even or rounded, much exceeding the wings.

The Hawks are distinguished by their elegant, generally slender form, the prominent lobe on the edges of the upper mandible, their comparatively short rounded wings, lengthened tail, and slender tarsi and toes. They fly low when searching for food, dart upon their prey on the ground, or in the air, or perched on trees or bushes. They nestle in trees, or on rocks, sometimes appropriate the nest of another bird, and lay from three to five large, roundish, spotted eggs.

16. Accipiter Palumbarius. Goshawk.

Male about twenty inches long, with the upper parts dark bluish-grey, the crown of the head and a broad band on its sides black, the lower white, transversely barred with blackish-grey, and marked with longitudinal shaft-lines. Female about twenty-five inches long, with the colouring similar, but the upper parts greyish-brown. Young brown above, the feathers edged with reddish-white, the head brown, the nape yellowish-white, streaked with dark brown; the lower parts yellowish-white, with longitudinal oblong dusky spots.

Male, 20, 43, 13, 1½, 3, 1$\frac{19}{12}$, 1. Female, 26, 45.

Extremely rare in Britain. Its habits have not been accurately observed with us. According to M. Temminck, it is essentially a northern bird, which migrates southward in winter, few remaining to breed in the central parts of Europe. It was much esteemed when the art of falconry was practised, and was flown at hares and the larger birds.

Falco palumbarius, Linn. Syst. Nat. i. 130.—Falco palumbarius, Temm. Man. d'Ornith. i. 55; iii. 27.—Accipiter palumbarius, MacGillivray, Brit. Birds, iii. 350.

17. Accipiter Nisus. Sparrow Hawk.

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Male about twelve inches long, with the upper parts dark bluish-grey, the lower reddish-white, transversely barred with yellowish-red. Female about fifteen inches long, with the upper parts greyish-brown, the lower greyish-white, transversely barred with dark grey. Young brown above, the feathers margined with light red, the markings on the lower parts more dusky, and the last band on each feather somewhat cordate or pointed, the female more tinged with red. In all stages, six dusky bands on the lateral, and four on the middle tail-feathers.

Male, 13, 23, 8, $\frac{9}{12}$, $2\frac{1}{4}$, $1\frac{4}{12}$, $\frac{6}{12}$. Female, $15\frac{1}{2}$, $28\frac{1}{2}$.

This species is of a much more slender form than the Goshawk, for which reason it has been referred by some to a separate genus. The male and the female differ extremely in size. In spirit, activity, dexterity, and daring, it has no superior. When searching for food it flies low, pounces suddenly upon its prey, or follows it at full speed, even amidst the branches. Besides larks, thrushes, sparrows, and other small birds, it preys upon partridges and pigeons. It is generally distributed in Britain and Ireland, and appears to be by far the most numerous species of this family. It sometimes builds in rocks, more frequently in trees, and often takes possession of the deserted nest of a crow. The eggs, from three to five, are roundish-elliptical, bluish-white, blotched and irregularly spotted, sometimes sparingly, sometimes profusely, with umber-brown of various shades; their length an inch and seven-twelfths, their breadth an inch and a quarter.

Falco Nisus, Linn. Syst. Nat. i. 131.—Falco Nisus, Temm. Man. d'Ornith. i. 56; iii. 28.—Accipiter Nisus, Sparrow-Hawk, MacGillivray, Brit. Birds, iii. 340.

GENUS XI. CIRCUS. HARRIER.

Bill short, compressed and attenuated toward the end; upper mandible with the dorsal line declinate and nearly straight as far as the edge of the cere, then decurved in about the fourth of a circle, the sides moderately convex, the edges with a broad festoon, the dip deflected, subtrigonal, acute; lower mandible with the angle medial, wide and rounded, the dorsal line somewhat convex, the sides rounded, the edges involute, the tip obliquely truncate. Mouth wide; tongue short, fleshy, concave above, with its tip rounded and

slightly emarginate; œsophagus very wide, with an extremely large crop; proventriculus much dilated; stomach very large, round, with its muscular coat very thin; pylorus without valves; intestine of moderate length and width; cœca very small; cloaca very large and globular. Nostrils large, ovato-oblong. Eyes large, the lachrymal ridge not projecting. Aperture of ear very large, elliptical, with a bare space extending from it to the base of the lower jaw. Feet long; tarsus slender, compressed, anteriorly and posteriorly scutellate; toes rather small, slender, scutellate above, unless at the base, the third and fourth connected by a rather large basal web; the first stouter but considerably shorter than the second; claws long, moderately curved, slender, compressed, tapering to a fine point; those of the first and second toes much larger. Plumage very soft and generally blended; feathers oblong; a distinct ruff of narrow curved feathers from behind the eyes to the throat; wings long, broad, much rounded, the fourth and third quills longest, the first about equal to the seventh, the outer four with the inner web sinuously cut out. Tail long, nearly even, or rounded.

There is considerable affinity in this genus to the owls, more especially in the ruff, large aperture of the ear, and downy plumage. The Harriers fly low, often in circles, pounce upon small quadrupeds, birds, and reptiles, or sometimes pursue birds in open flight, and feed occasionally on insects and fishes. They nestle on the ground. The female generally differs from the male in colour. Three species occur in Britain.

18. Circus cyaneus. Ring-Tailed Harrier.

The wings extending to about two inches from the tip of the tail; the fourth quill longest, the third almost equal. Male with the plumage light bluish-grey, the outer primaries black toward the end, the tail-coverts white. Female umber-brown above, pale reddish-yellow longitudinally streaked with brown beneath, tail-coverts white. Young similar to the female, with the tints richer.

Male, $18\frac{1}{4}$, $39\frac{1}{2}$, 13, $1\frac{1}{12}$, $2\frac{8}{12}$, $1\frac{3}{12}$, $\frac{8}{12}$. Female, 21, 46.

This species feeds on small birds, and the young of larger, but occasionally on grouse and partridges, often on young

hares, rabbits, mice, frogs, lizards, serpents, and insects. It flies with considerable rapidity, but buoyantly. Although nowhere very common, it is generally dispersed. It nestles on the ground, laying from three to five eggs, which are broadly elliptical, of a bluish-white colour, an inch and three-fourths in length, an inch and a third in breadth. Of the young, which resemble the female, the male assumes the adult plumage at the first moult in its second autumn.

Common Harrier. Hen Harrier. Blue Hawk. Blue Kite. Brown Kite. Blue or Brown Glede.

Falco cyaneus and pygargus, Linn. Syst. Nat. i. 126. Male and Female.—Falco cyaneus, Temm. Man. d'Ornith. i. 72.—Circus cyaneus, Ring-tailed Harrier, MacGillivray, Brit. Birds, iii. 366.

19. Circus cineraceus. Montagu's Harrier.

The wings extending a little beyond the tail; the third quill much longer than the fourth. Male with the plumage light bluish-grey, the outer primaries black toward the end, the tail-coverts white. Female umber-brown above, pale reddish-yellow, with longitudinal bright red streaks beneath, tail-coverts white. Young similar to the female, but having the lower parts of a uniform bright red.

Male, 17, .., 15, 1, $2\frac{2}{12}$, $1\frac{2}{12}$, $\frac{7}{12}$. Female, 19, ..., $15\frac{1}{2}$.

This species, which is said to occur on the continent from Poland southward, has been found in most of the southern and eastern counties of England, but has not hitherto been observed beyond Northumberland. Its habits are similar to those of the common species; its eggs of the same colour, but smaller.

Ash-coloured Harrier or Falcon.

Falco cineraceus, Mont. Ornith. Dict.—Falco cineraceus. Temm. Man. d'Ornith. i.—Circus cineraceus, Montagu's Harrier, MacGillivray, Brit. Birds, iii. 378.

20. Circus æruginosus. Marsh Harrier.

Adult umber-brown tinged with grey above, deep reddish-brown beneath, the head, part of the neck, and the shoulders, yellowish-white. In very old individuals, the primary quills and tail-feathers ash-grey. Young deep chocolate, the wing-coverts tipped with brownish-red, the quills and tail-feathers with reddish-white. After the first moult, more or less pale reddish or yellowish-white on the head and neck. Individuals differ considerably in colour. Old birds having

the secondary quills and tail ash-grey have not hitherto been observed in Britain.

Male, $21\frac{1}{2}$, . ., $16\frac{9}{12}$, $1\frac{5}{12}$, $3\frac{5}{12}$, $1\frac{9}{12}$, 1. Female, 24, 52.

Very rare in Scotland, but not uncommon in some parts of England. According to Montagu the nest is most frequently made on the ground, but sometimes in the fork of a large tree; the eggs white. The ruff is less conspicuous in this species, for which reason some have instituted a distinct genus for its reception. It flies low, and feeds on waterfowl, especially young ducks, water-rats, frogs, lizards, fish, and insects.

Moor Harrier. Moor Buzzard. Harpy. Duck Hawk.

Falco æruginosus, Linn. Syst. Nat. i. 130.—Falco rufus, Temm. Man. d'Ornith. i. 69. — Circus æruginosus, Marsh Harrier, MacGillivray, Brit. Birds, iii. 382.

FAMILY III. STRIGINÆ. STRIGINE BIRDS, OR OWLS.

The Striginæ, which are separated from the Falconinæ by a rather wide interval, are distinguished by their extremely large head, and especially the direction of their generally enormous eyes, which, in place of being lateral, are either anterior, or oblique. Bill short, generally stout, cerate, wide at the base, compressed toward the end; upper mandible with its dorsal line declinate and decurved, its edges destitute of prominent lobe, the tip prolonged, decurved, acute; lower mandible with the angle wide; the edges decurved with a shallow sinus close to the rounded tip. Tongue small, fleshy, deeply emarginate, and papillate at the base, channelled above, horny beneath, with the tip narrowed and emarginate or bifid; œsophagus very wide, of nearly equal diameter throughout, being destitute of crop; proventriculus wide; stomach large, roundish, with the muscular coat very thin, and composed of a single series of fasciculi, the epithelium soft or somewhat hard, smooth or rugous; intestine short; cœca large, oblong, narrowed at the base; cloaca large and globular. Trachea short, wide, of thin and slender rings; inferior larynx with a single pair of muscles,

and the last entire ring partitioned. Eyes extremely large, directed forwards, immobile; upper eyelid very large. Nostrils rather large or of moderate size, varying in figure. Apertures of ears very large, often furnished with elevated dermal margins or opercula, constituting a kind of concha. Legs muscular; tarsus covered with feathers, which are sometimes however destitute of filaments; toes four, the outer next in length to the first and capable of being directed backwards, the anterior somewhat webbed at the base, all with a few scutella at the end; claws long, curved, tapering to a fine point. Plumage very full, remarkably soft; down very soft and copious; feathers of the face arranged so as to form two disks surrounding the eyes; a ruff of narrow recurved feathers; wings always broad; the filaments of the outermost quill generally separated at the end and recurved; tail generally short, always of twelve more or less arched feathers.

Species of Strigineæ occur in all climates. Some, which approach the Falconinæ in form and habits, seek their prey by day, but the greater number are nocturnal, and unable to see in the full light of the sun. They feed on quadrupeds, birds, and insects, sometimes on fishes, and other animals. The hair, feathers, scales, elytra, and bones, are disgorged in pellets. Their flight is buoyant, and, owing to the peculiar softness of their plumage, causes little or no sound. They nestle on the ground, in hollow trees, rocks, and buildings, laying from two to five roundish white eggs. The young, at first covered with light-coloured down, remain till fully fledged. Nine species rank as British, but only four are general and resident.

GENUS XII. SYRNIA. DAY-OWL.

Bill very short, strong, with its upper outline decurved from the base, the lower convex, the tip trigonal, decurved,

acute. Mouth very wide; tongue short, deeply sagittate and papillate at the base, nearly flat above, with the sides parallel, the tip narrow and slightly emarginate; œsophagus wide, without dilatation; stomach large, roundish, its muscular coat very thin, the epithelium thick, moderately tough, and rugous; pylorus with two prominences; intestine of moderate length, rather wide; cœca large, oblong, narrowed at the base; cloaca globular, very large. Nostrils ovate, oblique, with the cere tumid behind them. Eyes very large. Conch simple, elliptical, less than half the height of the head; which is very large, broad, and rounded; neck short; body of moderate size. Legs rather short, stout; tarsus short, feathered; toes short, feathered; but with the filaments wanting in some species, all with two scutella at the end; claws long, well curved, compressed, very acute. Plumage very full and soft; facial disks incomplete above the eyes; ruff incomplete and inconspicuous; feathers oblong, rounded; wings large, broad, rounded; the first four quills sinuate on both webs; tail broad, rounded, rather long.

These birds pursue their prey chiefly by day, and inhabit open districts. They are for the most part confined to the Arctic regions during the warmer season, and at the approach of winter advance a little southward. Their food consists of quadrupeds, birds, fishes, and insects. Of the two species which have been met with in Britain, neither is permanently resident. Another has been once procured at some distance from the coast.

21. Syrnia funerea. Hawk Day-Owl.

Tail rather long and much rounded; toes covered with shaggy feathers; upper parts brownish-black, or chocolate-brown, spotted and barred with white; lower parts white, narrowly barred with dusky; quills with transverse elliptical white spots, tail with about eight bands of narrower spots; bill yellowish-white, claws dusky.

Male, 15, ..., $9\frac{3}{4}$, $1\frac{3}{12}$, 1, $\frac{10}{12}$, $\frac{10}{12}$. Female, 17, ..., 10.

Inhabits the northern parts of both continents. An individual was captured, in March 1830, off the southern coast of England, and described, in 1835, by Mr Thompson of Belfast.

Hawk Owl. Hudson's Bay Owl.

Strix funerea, Gmel. Syst. Nat. i. 294.—Strix funerea,

Man. d'Ornith. i. 86.—Syrnia funerea, Hawk Day-Owl, MacGillivray, Brit. Birds, iii. 404.

22. Syrnia Nyctea. Snowy Day-Owl.

Tail rather long, moderately rounded; toes covered with shaggy feathers; plumage white, the head and back spotted, the wings, tail, and lower parts barred with dusky-brown. Young with large dark markings.

Male, 23, 56, 17¼, 1 9/12, 2 2/12, 1 7/12, 1 8/12. Female, 26, 65.

Some individuals are almost entirely white, while others have the markings large. It appears to be resident in Shetland, and has been obtained in Orkney, on the mainland of Scotland, and as far south as Yorkshire. It has also several times been procured in Ireland. It was first described as British by Mr Bullock, but had previously been found in Shetland by Dr Lawrence Edmondston, who published, in 1822, a detailed account of its habits.

Snowy Owl. Harfang. Kat-yogle.

Strix nyctea, Linn. Syst. Nat. i. 132.—Strix nyctea, Temm. Man. d'Ornith. i. 82.—Syrnia nyctea, Snowy Day-Owl, MacGillivray, Brit. Birds, iii. 407.

23. Syrnia psilodactyla. Bare-toed Day-Owl.

Toes covered with shaft-bristles, between which the scales are apparent; upper parts brown, the head with linear oblong, the neck, back, and wings with roundish, the tail with four bands of transverse, white spots; lower parts yellowish-white, with longitudinal brown spots.

Male, 10½, ..., 6¼, 1 0/12, 1¼, 1 1/12, 6½.

Of very rare occurrence in Britain, and hitherto not found in Scotland. It is said to be common on the Continent, but not to extend northward beyond lat. 55°. This species is distinguished from the only other one that resembles it, by having the toes covered with bristles instead of feathers.

Little Owl. Passerine Owl.

Strix passerina, Temm. Man. d'Ornith. i. 92; iii. 49.—Noctua nudipes, Gould. Birds of Eur.—Syrnia psilodactyla, Bare-toed Day-Owl, MacGillivray, Brit. Birds, iii. 417.

GENUS XIII. SCOPS. OWLET.

This genus is composed of several small owls, agreeing with Syrnia and Bubo, in having the conch simple, but differing from the former in having elongated tufts on the head,

and from the latter in having the wings longer, the tarsi more slender, and the toes more or less bare. Bill short, stout, with its upper outline decurved from the base, the lower convex, the tip prolonged, decurved, acute. Nostrils roundish. Eyes very large. Conch elliptical, simple, about a third of the height of the head, the latter very large, roundish; neck short; body slender. Legs rather short; tarsi slender, feathered; toes short, bare, reticulate, at the end scutellate; claws long, slightly curved, compressed, tapering, acute. Plumage full, soft; two elongated tufts on the head; facial disks incomplete above the eyes; ruff inconspicuous and incomplete; feathers generally ovato-oblong; wings long, with the third quill longest; tail short, slightly rounded.

24. Scops Aldrovandi. Aldrovandine Owlet.

Head with tufts of about twelve feathers; plumage light grey variegated with brown, and marked with longitudinal brownish-black lines and transverse undulations; a large whitish spot on the outer scapulars; primary quills with conspicuous white spots between the brown bands on the outer web.

Male, $7\frac{1}{2}$, ..., $6\frac{1}{4}$, $\frac{9}{12}$, 1, $\frac{9}{12}$, $\frac{4\frac{1}{2}}{12}$.

Of very rare occurrence in England, and supposed to be there merely migratory. Said to be common in the southern parts of the continent, and to occur in Africa as well as Asia.

Scops Eared Owl. Little Horned Owl.

Strix Scops, Linn. Syst. Nat. i. 129.—Strix Scops, Temm. Man. d'Ornith, i. 103.—Scops Aldrovandi, Aldrovandine Owlet, MacGillivray, Brit. Birds, iii. 422.

GENUS XIV. BUBO. EAGLE-OWL.

Bill short, robust, compressed toward the end; upper mandible with its outline decurved from the base, the tip subtrigonal, decurved, acute; lower mandible with the angle wide, the dorsal line short and slightly convex, the edges decurved at the end, with a sinus close to the abrupt tip. Mouth very wide; tongue short, oblong, sagittate and papillate at the base, its tip rounded and retuse; œsophagus very wide, without crop; proventriculus dilated below; stomach large, roundish, very thin, its inner surface smooth and soft;

pylorus without valvular prominences; intestine of moderate length, rather wide; cœca large, oblong, narrowed at the base; cloaca very large, globular. Nostrils roundish-elliptical. Eyes extremely large, fixed, oblique. Conch simple, elliptical, from a third to half the height of the skull. Head very large, broad; neck short; body stout, much narrowed behind. Legs rather short, strong; tarsus short, closely feathered; toes short, strong, feathered, with two terminal scutella; claws long, well curved, tapering, very acute. Plumage soft and very full; facial disks incomplete; ruff incomplete and inconspicuous; wings long, very broad, much rounded, third quill longest; outer three quills sinuate on the inner web; tail of moderate length, broad, rounded.

The birds of this genus are among the largest of the family. They prey on quadrupeds and birds, are not entirely nocturnal, reside in wooded regions, and nestle on rocks, trees, or the ground.

25. Bubo maximus. Great Eagle Owl.

Tufts of about eighteen feathers, projecting more than two inches beyond the plumage of the head; upper parts variegated with dark brown and light reddish-yellow; lower parts of the latter colour, with longitudinal blackish-brown spots and streaks, and numerous transverse undulating lines; facial disks greyish-brown, obscurely barred; throat with a patch of white; bill and claws greyish-blue at the base, black toward the end.

Male, 24, 58, 19, $2\frac{1}{2}$, $2\frac{9}{12}$, $2\frac{5}{12}$, $1\frac{8}{12}$. Female, 26, 61.

Generally distributed in the wilder parts of Europe. Individuals have been obtained in several districts of England; but it does not now breed in any part of Britain.

Great-Horned Owl. Great-Eared Owl. Great Owl.

Strix Bubo, Linn. Syst. Nat. i. 131.—Strix Bubo, Temm. Man. d'Ornith, i. 100.—Bubo maximus, Great Eagle-Owl, MacGillivray, Brit. Birds, iii. 428.

GENUS XV. ULULA. HOOTING-OWL.

Bill short, strong, compressed toward the end; upper mandible with the dorsal line decurved from the base, the tip trigonal, decurved, acute; lower mandible with the angle wide, the dorsal line convex, the edges with a sinus close to

the abruptly rounded tip. Mouth very wide; tongue short, narrow, deeply sagittate and papillate at the base, covered above with minute papillæ, the sides nearly parallel, the tip rounded and emarginate; œsophagus wide, without crop; stomach very large, roundish, very thin, its inner surface soft and slightly rugous; pylorus with a semicircular flap; intestine of moderate length, rather wide; cœca large, oblong, narrowed at the base; cloaca globular, very large. Nostrils roundish, with the cere tumid behind. Eyes very large, oblique, slightly mobile. Conch somewhat elliptical, extending from the level of the upper part of the eye to the base of the lower jaw, and having an anterior semicircular operculum. Head extremely large, broad, rounded; neck short; body short, much compressed behind. Legs of moderate length, stout; tarsus short, feathered; toes short, feathered, all with two scutella at the end; claws long, well curved, tapering, compressed, very acute. Plumage very full and soft; facial disks very large, complete; ruff complete and conspicuous; wings long, very broad, much rounded; the first five quills abruptly cut out on the inner edge, the fourth longest, the first and tenth about equal; tail broad, rounded.

These birds reside chiefly in wooded districts, are strictly nocturnal, and prey on small quadrupeds, birds, insects, and occasionally fishes.

26. Ulula Aluco. Tawny Hooting Owl.

Upper parts brownish-red, more or less tinged with grey, marked with longitudinal dark brown streaks, and transverse lines of a lighter tint; the lower parts reddish-white, or yellowish, with longitudinal linear-lanceolate and transverse undulated dark brown markings; large white spots on some of the scapulars and wing-coverts; bill greyish-yellow; iris bluish-black. Young birds more tinged with red, old birds more grey.

Male, 14, 31, $10\frac{1}{2}$, $1\frac{5}{12}$, $1\frac{10}{12}$, $1\frac{3}{12}$, $\frac{1}{12}$. Female, 16, 34.

This, next to the Mottled Tufted Owl, and Barn Owl, is the most common species in Britain, where it is generally dispersed in the wooded districts. At night it emits a loud and doleful cry, termed hooting, besides which it occasionally utters a harsh scream. Its food consists of young hares, rats, mice, moles, birds of various species, beetles, and other in-

sects, occasionally fish. Nestles in decayed trees, or on the ground, laying three or four pure white eggs, an inch and eleven-twelfths long, an inch and a half in breadth.

Brown Owl. Tawny Owl. Grey Owl. Ivy Owl. Beech Owl. Howlet. Jenny Howlet. Screech Owl.

Strix Aluco and Stridula, Linn. Syst. Nat. 132, 133.—Strix Aluco, Temm. Man. d'Orn. i. 89.—Ulula Aluco, Tawny Owl, MacGillivray, Brit. Birds, iii. 438.

27. Ulula Tengmalmi. Tengmalm's Hooting-Owl.

Upper parts chocolate-brown, spotted with white; tail with five rows of transversely elongated spots; lower parts yellowish-white, with longitudinal brown markings; tarsi and toes covered with downy feathers; length about ten inches.

Male, $10\frac{1}{2}$, . . , $6\frac{10}{12}$, 1, $\frac{10}{12}$, $\frac{9}{12}$, $\frac{8}{12}$. Female, $11\frac{1}{2}$, ..., $7\frac{1}{2}$.

This species is said to inhabit the northern parts of Europe, and to extend in diminished numbers as far south as France, Switzerland, and Italy. In North America, it occurs, according to Dr Richardson, from Great Slave Lake to the United States. In England, a very few individuals have been met with.

Strix Tengmalmi, Gmel. Syst. Nat. i. 291.—Strix Tengmalmi, Temm. Man. d'Ornith. i. 94.—Ulula Tengmalmi, Tengmalm's Hooting Owl, MacGillivray, Brit. Birds, iii. 445.

GENUS XVI. ASIO. TUFTED-OWL.

Although the species of the genus Bubo are furnished with tufts on the head, those of the present species are easily distinguished from them by the enormous size of their auditory concha, and other peculiarities. Bill short, moderately stout, compressed toward the end; upper mandible with the dorsal line decurved from the base, the tip acute, descending obliquely; lower mandible with the angle wide, the edges with a slight sinus, close to the obliquely truncate tip. Mouth very wide; tongue short, narrow, oblong, deeply emarginate and papillate at the base, its tip thin, narrow, emarginate; œsophagus very wide, without crop; stomach large, roundish, very thin, with a soft and somewhat rugous epithelium; pylorus with a thin margin; intestine of moderate length and width; cœca of considerable length, oblong, contracted toward the base; cloaca globular, very large. Nostrils large, oblong, oblique. Eyes very large, oblique. Conch extremely

large, extending from over the middle of the eye to the base of the lower mandible, and of a semilunar form, with an anterior semicircular flap in its whole length, and a broad membranous margin behind. Head very large, short; neck short; body short, much compressed behind. Legs short, moderately stout; tarsus short, and with the toes covered with somewhat silky feathers; toes short, with two terminal scutella; claws long, moderately curved, slender, compressed, extremely acute. Plumage full, extremely soft; facial disks very large, complete; ruff complete; a tuft of elongated feathers on each side over the eye; wings very long, broad, rather pointed; the second quill longest, the first and fourth about equal, the outer only having a slight sinus in the inner web close to the tip; tail rather short, a little rounded.

The species of this genus are less robust than those belonging to Bubo. They are nocturnal, and incapable of seeking their prey by day. Both our species occur also in North America.

28. Asio Otus. Mottled Tufted-Owl.

Tufts conspicuous, projecting an inch and a half beyond the plumage of the head; upper parts light reddish-yellow, longitudinally streaked, transversely barred, and finely undulated with brown and greyish-white; lower parts light reddish-yellow, with oblong brown streaks, and faintly undulated; facial disks whitish in their anterior half, pale yellowish-brown behind, the eye half surrounded by dark brown. Young with the facial disks yellowish-brown, and the dark markings on the lower parts broader.

Male, $14\frac{1}{2}$, 36, $11\frac{1}{2}$, $1\frac{5}{12}$, $1\frac{1}{2}$, $1\frac{1}{4}$, $\frac{9}{12}$. Female, 16, 40.

A constant resident, occurring in the wooded parts of both England and Scotland, it being, next to the Barn Owl, our most common species. It is strictly nocturnal; feeds on small glires, moles, birds, and insects; reposes by day in thick woods; generally appropriates the deserted nest of a crow or other bird, and lays from three to five eggs, which are pure white, an inch and nine-twelfths long, an inch and four-twelfths in breadth. The young, at first covered with light grey down, faintly barred with brown, are generally abroad in June.

Long-eared Owl. Common-eared Owl. Horned Owl.

Strix Otus, Linn. Syst. Nat. i. 132.—Strix Otus, Temm.

Man. d'Ornith. i. 102.—Asio Otus, Mottled Tufted-Owl, MacGillivray, Brit. Birds, iii. 453.

29. Asio brachyotus. Streaked Tufted-Owl.

Tufts inconspicuous, projecting about half an inch beyond the plumage of the head; upper parts light reddish-yellow, with broad longitudinal streaks and transverse bars of deep brown; lower parts light reddish-yellow, with narrow longitudinal brown streaks; facial disk whitish in its anterior half, pale yellowish-brown behind, the eye completely surrounded with brownish-black; middle tail-feathers with a brown central patch in each of the light-coloured spaces between the dark bands. Young similar to the adult.

Male, 15, 38, $11\frac{3}{4}$, $1\frac{3}{12}$, $1\frac{7}{12}$, $1\frac{3}{12}$, $\frac{9}{12}$. Female, 16, 40.

Individuals are permanently resident, and others immigrant from the north in October. In winter it is dispersed over Scotland and England, and is frequently found in turnip fields, or by the sides of hedges or brooks. Mr Hoy found it breeding in Norfolk, and Sir William Jardine in Dumfriesshire. The nest is placed on the ground, and the eggs, which are pure white, are generally five. It feeds on small quadrupeds and birds, and appears not to be altogether nocturnal.

Short-eared Owl. Hawk Owl. Woodcock Owl. Mouse-hawk.

Strix Ulula and brachyotus, Lath. Ind. Ornith. i. 60, 55.—Strix brachyotus, Temm. Man. d'Ornith. i. 99.—Asio brachyotus, Streaked Tufted-Owl, MacGillivray, Brit. Birds, iii. 461.

GENUS XVII. STRIX. SCREECH-OWL.

Bill rather short, moderately stout, compressed toward the end; upper mandible with the dorsal line straight to the edge of the cere, the tip decurved, acute; lower mandible with the angle long, the dorsal line short and somewhat convex, the edges with a small sinus close to the rounded tip; the gape-line slightly sinuous. Mouth very wide; tongue narrow, sagittate and papillate at the base, the sides nearly parallel, the tip thin, bifid with two pointed lobes; œsophagus very wide, of uniform diameter; stomach very large, roundish, its muscular coat very thin, the inner smooth and even; pylorus marginate, or having one triangular prominence; intestine of moderate length, narrow; cœca long, narrow at the base, oblong toward the end; cloaca extremely

large and globular. Nostrils large, ovate, oblique. Eyes very large, slightly mobile, oblique. Conch extremely large, semicircular, extending from over the anterior angle of the eye to the middle of the lower jaw, with an anterior erect, semicircular, subtruncate operculum. Head extremely large, broad behind, somewhat trigonal; neck short; body slender; legs rather long, of moderate strength; tarsi covered with small downy feathers; toes short, covered above with small scales, together with adpressed shaft-bristles, and two or three terminal scutella; claws long, moderately curved, tapering, extremely acute, that of the third toe with its inner dilated edge serrate. Plumage very full, soft, and downy; facial disks very large and complete; ruff perfect and conspicuous; wings long, very broad; the second quill longest, the first and third slightly shorter; all the quills with their margins direct; tail short, even, rather weak.

The Screech-Owls have an extremely buoyant and silent flight. They are nocturnal, but are able to find their way by day. Their food consists chiefly of small glires, insects, and occasionally young birds. They nestle in buildings, rocks, and other high places, as well as on the ground, and lay two or three elliptical or oval white eggs. Species occur on both continents, as well as in New Holland.

30. Strix flammea. European Screech-Owl.

Operculum margined with linear-oblong feathers; bill yellowish-white; claws dark purplish-grey; upper parts light reddish-yellow, variegated with minutely mottled ash-grey, and small black and white spots; facial disks and lower parts white, the latter with very small dusky spots. Young similar to the adult, but with the upper parts darker.

Male, 14, 35, $11\frac{1}{4}$, $1\frac{1}{2}$, $2\frac{5}{12}$, $1\frac{4}{12}$, $\frac{8}{12}$. Female, 15, 28.

This species is more extensively distributed, and more numerous in Britain, than any other of its family; but it is very seldom met with in the wilder and bleaker districts, its favourite haunts being in the cultivated and sheltered parts of the country, where meadows and corn-fields foster the animals on which it habitually preys. Ruined buildings and hollow trees are its usual places of abode, and there it deposits its eggs, from two to five in number, an inch and a half in length, an inch and a quarter in breadth, pure white, and smooth. The young are at first covered with white down.

Several broods are produced annually. It feeds chiefly on mice. Its cry is a harsh shriek, and, like the other species, it hisses when irritated or alarmed.

Barn Owl. Church Owl. Screech Owl. White Owl. Gillihowter. Howlet.

Strix flammea, Linn. Syst. Nat. i. 133.—Strix flammea, Temm. Man. d'Ornith. i. 91 ; iii. 48.—Strix flammea, European Screech-Owl, MacGillivray, Brit. Birds, iii. 473.

It will be very apparent to every person who has examined a considerable number of birds, and observed their habits, that each of the three groups above described forms a very natural family, and that these groups, on being put together, form a very natural order, which is well defined, and does not very obviously blend into any other, although indications of affinity to other groups are everywhere perceptible. Thus, some Owls are very evidently allied to some Goatsuckers, and some Hawks are related to Shrikes. Were we to predetermine a typical number, and assume it to be three, we might plausibly enough institute analogies, and discover a ternary disposition throughout. Thus, to constitute another order, the Cypselinæ or Swifts would represent the Vultures, the Hirundinæ or Swallows might answer for the Hawks, and the Caprimulginæ or Goatsuckers for the Owls. It does, in fact, appear, that these three groups, although they differ considerably in the structure of the digestive organs and skeleton, form a natural enough order, to which I have elsewhere given the name of Volitatores or Gliders. Whether there be truth in this or not, these Volitatores may now occupy our attention as well as any other group. Although birds are both masculine and feminine, yet, as the Romans held their *Aves* to be of the latter gender, I shall, in deference to their better knowledge of their own language, modify the names which I have given to the larger groups, or orders. These Orders may be considered as analogous to the groups called Natural Families by Botanists, and the Families as corresponding to their Tribes.

ORDER II. VOLITATRICES. GLIDERS.

Birds of small or moderate size, having the body short, and proportionally light; the neck very short; the head roundish and depressed. Bill very short, of great breadth at the base, the mouth being extremely wide; upper mandible with its dorsal line straight until near the end, when it is decurved, the basal sinuses wide, the sides depressed, the edges arched and continuous, the tip very small and deflected; lower mandible with the angle wide, the dorsal line extremely short, and convex, the edges arched, the tip very small and pointed. Mouth capacious, generally wider than the head; tongue small, triangular; œsophagus wide, without crop; proventriculus with a belt of oblong glandules; stomach large and thin, or moderately muscular; intestine of moderate length and width; cœca none, or very small, but in the nocturnal species large and oblong. Nostrils small; eyes of moderate size or large; aperture of ear large. Feet extremely small; tarsus very short; toes four, short; claws curved, compressed, acute. Wings very long, generally narrow.

The Volitatrices have a peculiarly light and bounding flight, glide along with surprising speed, deviate on occasion as if without effort, and seem scarcely liable to fatigue on their aerial rambles, which are therefore extremely protracted. Owing to the very diminutive size of their feet, they are all incapable of walking efficiently, or of advancing to any distance on the ground or on trees. They feed on insects, which they seize in open flight, with the bill. Three distinct groups, the Cyp-

SELINÆ, HIRUNDINÆ, and CAPRIMULGINÆ, enter into this order.

FAMILY IV. CYPSELINÆ. CYPSELINE BIRDS, OR SWIFTS.

Body moderate; neck very short; head roundish, depressed. Bill extremely short, weak, opening to beneath the hind part of the eyes, compressed at the end; upper mandible with the dorsal line convex, the tip declinate; lower mandible much smaller, with the angle very large, the dorsal line slightly convex, the tip slender. Mouth very wide; palate nearly flat, covered with minute papillæ; tongue short, triangular, fleshy, sagittate and papillate at the base, with the tip obtuse, or somewhat bifid; œsophagus wide above, then of moderate breadth; stomach elliptical, its muscular coat of moderate thickness, epithelium dense, rugous; intestine extremely short, rather wide; no cœca; cloaca large, ovate. Trachea without inferior laryngeal muscles. Eyes large. Nostrils oblong, basal, approximate. Apertures of ears rather large. Feet extremely short; tarsus stoutish; four toes, all directed forwards, the outer three all nearly equal; claws rather large, stout, decurved, very acute. Plumage rather compact above, blended beneath; no bristles about the mouth; wings extremely elongated, falciform, the first or second quill longest. Tail of ten feathers, moderate or long, but much exceeded by the wings.

The Swifts are remarkable for the extreme rapidity of their flight and unwearied activity. They feed exclusively on insects, which they seize in open flight, and therefore migrate southward in autumn. They reside in holes and crevices of rocks and buildings, laying from two to five very elongated white eggs. Having no inferior laryngeal muscles, they are destitute of song, but utter a loud shrill scream.

GENUS XVIII. CYPSELUS. SWIFT.

Bill extremely short, depressed, broad at the base, narrowed at the end; upper mandible with its dorsal line convex, the edges sharp, and incurved, the nasal sinuses very large, the tip deflected; lower mandible much smaller, and slightly shorter, its angle very wide, the dorsal line very short and convex, the edges involute, the tip narrow but obtuse; gape-line from beneath the hind part of the eyes, arched. Upper mandible shallow, with a slightly prominent central line; palate flat; tongue short, sagittate and papillate at the base, bifid at the tip; œsophagus wide at the commencement, then rather narrow; proventriculus oblong; stomach elliptical, with the muscular coat rather thin, the cuticular lining thin, dense, longitudinally rugous; intestine very short, rather narrow; no cœca; cloaca oblong. Nostrils oblong, with an elevated margin. Eyes rather large. Aperture of ear large, roundish. Body rather full, elongated, flattened; neck very short; head broad. Feet extremely short, strong; tarsus extremely short, bare behind only; inner toe smallest and directed forwards, third longest; all the toes with two phalanges; claws large, strong, curved, tapering, very acute. Plumage soft, glossy; no bristles at the base of the bill; wings extremely long, narrow and pointed; the outer primaries a little incurved toward the end, the first and second longest; tail long, forked, of ten feathers, much exceeded by the wings.

Owing to the extreme shortness of their feet, the Swifts are unable to walk efficiently; but they cling with ease to a perpendicular surface. Their flight is extremely rapid. They nestle in holes in buildings, or in crevices of rocks, forming their nests of materials gathered on wing.

31. Cypselus Melba. White-bellied Swift.

All the upper parts, together with the sides and lower part of the neck, the sides of the body, legs, and lower wing and tail coverts, greyish-brown; the rest white; length to end of tail about nine inches.

Male, 9, 21, $9\frac{1}{12}$, $\frac{5}{12}$, $\frac{6}{12}$, $\frac{5}{12}$, $\frac{5}{12}$.

Only three specimens have been obtained in England, and

one in Ireland, this species not migrating regularly so far northward as Britain. Common in the south of Europe.

Alpine Swift.

Hirundo Melba, Linn. Syst. Nat. i. 345.—Cypselus alpinus, Temm. Man. d'Ornith. i. 433.—Cypselus Melba, White-bellied Swift, MacGillivray, Brit. Birds, iii. 611.

32. Cypselus murarius. Black Swift.

Blackish-brown, slightly glossed with green; throat greyish-white; length about seven and a half inches.

Male, $7\frac{1}{2}$, $16\frac{1}{2}$, 7, $\frac{1}{4}$, $\frac{5}{12}$ and $\frac{3}{4}$, $\frac{3}{12}$ and $\frac{1}{2}$, $\frac{3}{12}$ and $\frac{1}{2}$. Female, $7\frac{1}{12}$, $15\frac{1}{2}$.

Arrives in the beginning of May, and departs in the end of August. Generally dispersed in Britain and Ireland. Resorts to steeples, towers, ruinous castles, and abrupt rocks, where it nestles in holes or crevices. The nest is rudely constructed of straws, fibrous roots, moss, wool, hair, and feathers, agglutinated. The eggs, two or three, are pure white, of an elongated form, an inch in length, seven and a half-twelfths in breadth.

Black Martin. Swift. Screech. Develing.

Hirundo Apus, Linn. Syst. Nat. i. 344.—Cypselus murarius, Temm. Man. d'Ornith. i. 434.—Cypselus murarius, Black Swift, MacGillivray, Brit. Birds, iii. 614.

FAMILY V. HIRUNDINÆ. HIRUNDINE BIRDS, OR SWALLOWS.

Body moderately short, rather compressed; neck very short; head broad, depressed. Bill very short, much depressed, opening to beneath the fore part of the eye; upper mandible with the dorsal line slightly convex, the edges with a slight notch close to the slender tip; lower mandible with the angle very wide, the dorsal line nearly straight, the tip narrow, but rather obtuse; gape-line nearly straight. Palate flat; tongue short, triangular, sagittate and papillate at the base, with the tip bifid; œsophagus wide at the commencement, then narrow; stomach broadly elliptical, with the muscular coat thick, forming two moderate lateral muscles, the cuticular lining thin, dense, broadly rugous; intestine short, rather wide;

cœca very small; cloaca oblong. Trachea with four pairs of inferior laryngeal muscles. Nostrils small, linear-oblong. Eyes of moderate size. Aperture of ear rather large, elliptical. Feet extremely short, slender; tarsus bare or feathered, always with some scutella below; toes small, three before, one behind, bare and scutellate, or feathered, with the usual number of joints; claws rather long, moderately arched, compressed and laterally grooved, tapering to a very acute point. Plumage soft, blended; bristles about the mouth very small; wings extremely long, pointed, the outer two quills longest, and slightly incurved toward the end; tail of twelve feathers, even or forked. Trachea with four pairs of inferior muscles.

The Hirundinæ feed entirely on insects, which they capture on wing. They are therefore obliged to retire southward, in autumn, from the colder and temperate regions. Their flight is extremely rapid and buoyant; their ordinary cry a chirp, or twitter; but most of them have a modulated song. They nestle in holes, or against the face of rocks, buildings, or trees, forming their nest of mud, or of twigs held together by a glutinous substance, and laying four or five white eggs, which are either plain or spotted.

GENUS XIX. HIRUNDO. SWALLOW.

Bill very short, much depressed, of a triangular form; upper mandible with the dorsal line convexo-declinate, the edges slightly inflected, with a distinct notch, the tip slender, but blunt; lower mandible with the angle very large and wide. The characters of the digestive apparatus, organs of sense, and limbs, as above. Plumage soft, glossy on the upper parts; the feathers oblong; bristle-feathers at the base of the upper mandible scarcely apparent; wings extremely long, pointed, with the outer two quills longest; tail emarginate or forked.

As in the genus Buteo, one species has the tarsi bare, while they are feathered in another; so may it be with

Swallows; and as various degrees of emargination on the one hand, or of cuneation on the other, are observed in many genera, so may it be with Swallows. Wherefore, it is not expedient to consider every little modification of the tail, or of the covering of the feet, as indicative of a generic difference. Our three British Swallows are nearly enough allied to be placed in one genus. They all hunt in the same manner, but differ in their mode of nestling.

33. Hirundo rustica. Red-fronted or Chimney Swallow.

Upper parts glossy steel-blue; forehead and throat brownish-red; a broad band on the fore-neck dusky; tail very deeply forked, each feather, the two middle excepted, with a white spot on the inner web; breast and abdomen reddish-white. The young have the tail shorter, the plumage less glossy, the forehead and throat dull pale brown.

Male, $8\frac{3}{4}$, 14, $4\frac{10}{12}$, $\frac{4}{12}$, $\frac{5}{12}$, $\frac{13}{24}$, $\frac{3}{12}$. Female, $7\frac{3}{4}$, 14.

Generally distributed in Britain and Ireland, arriving from the tenth of April to the fifth of May, and departing early in October. The nest is placed under the eaves of out-houses, on beams or rafters within them, on the face of rocks, in quarries, or on the sides of wells, or the shafts of old coal-pits, and is formed of mud, with a lining of grass and feathers, its form being half-cup-shaped, or on a flat surface entirely so, always widely open above. The eggs, four or five, elongated, ten-twelfths in length, seven-twelfths in breadth, white or reddish-white, marked with dark-red dots and specks. Two broods are sometimes reared in the season.

Swallow. Common Swallow.

Hirundo rustica, Linn. Syst. Nat. i. 343.—Hirundo rustica, Temm. Man. d'Ornith. i. 427.—Hirundo rustica, Red-fronted or Chimney Swallow, MacGillivray, Brit. Birds, iii. 558.

34. Hirundo Urbica. White-rumped or Window Swallow.

Head, hind neck, and fore part of the back glossy steel-blue; rump and lower parts white; tail deeply forked, the feathers plain; the tarsi and toes feathered. The young differ from the adult chiefly in having the dark parts of the plumage duller, and tinged with brown.

Male, $5\frac{8}{12}$, 12, $4\frac{1}{2}$, $\frac{7}{24}$, $\frac{5}{12}$, $\frac{5}{12}$, $\frac{3}{12}$.

Generally distributed in Britain and Ireland, arriving

a few days later than the chimney swallow, and departing about the same time. The nest is placed in the upper corner of a window, under the eaves of out-houses, or on the face of a rock, and is formed of mud, with a lining of grass and feathers. It has only a small roundish aperture at the upper part. The eggs, four or five, are longish, about nine-twelfths in length, six and a half twelfths in breadth, pure white. Two broods are sometimes reared.

House Swallow. Window Swallow. Martin. House Martin. Martinet. Martlet.

Hirundo urbica, Linn. Syst. Nat. i. 347.—Hirundo urbica, Temm. Man. d'Ornith, i. 428.—Hirundo urbica, White-rumped Swallow, MacGillivray, Brit. Birds, iii. 573.

35. Hirundo riparia. Bank Swallow.

Upper parts and a broad band across the breast greyish-brown, lower parts brownish-white, tail slightly forked, edge of outer quill smooth. The young have the feathers of the upper parts greyish-black margined with light reddish-brown, the throat reddish-white with small dusky spots, the breast-band blackish-grey; and are much more beautiful than the adult birds.

Male, $5\frac{1}{3}$, 11, $4\frac{1}{8}$, $\frac{3}{12}$, $\frac{5}{12}$, $\frac{4}{12}$, $\frac{3}{12}$. Female, 5, 11.

Generally distributed in Britain and Ireland, but more local than the other species, residing in holes which it forms in abrupt banks. It arrives about the same period as they, but departs sooner, or about the middle of September. The nest is shallow, formed of straws, and lined with a few large feathers. The eggs from four to six, elongated, eight-twelfths in length, five and a half in breadth, white. Two broods are sometimes reared.

Sand Martin. Sand Swallow.

Hirundo riparia, Linn. Syst. Nat. i. 344.—Hirundo riparia, Temm. Man. d'Ornith. i. 429.—Hirundo riparia, Bank Swallow, MacGillivray, Brit. Birds, iii. 595.

FAMILY VI. CAPRIMULGINÆ. CAPRIMULGINE BIRDS, OR GOATSUCKERS.

Body very small, in proportion to the plumage, as in the owls, which they resemble also in being nocturnal; neck short; head very large, broad, and depressed. Bill

very short, much depressed, generally feeble, the horny part being small; upper mandible with the dorsal line convex, the ridge rather narrow, the edges inflected toward the end, the tip very narrow, and deflected; lower mandible smaller, with the angle extremely large, the crura slender, the edges inflected toward the end, the tip small and deflected. Mouth extremely wide; palate smooth, and nearly transparent; tongue extremely small, slender, tapering to an obtuse point; œsophagus wide, very thin, without crop; stomach large, roundish, its muscular coat very thin, the epithelium very hard, with prominent longitudinal rugæ; intestine short, wide, extremely thin; cœca large, oblong, narrowed at the base, as in Owls and Cuckoos; cloaca globular. Trachea of nearly uniform width, without inferior laryngeal muscles. Eyes very large. Nostrils elliptical. Apertures of ears large. Feet very small; tarsus partially feathered; toes four, the anterior connected by basal membranes, the first short and directed inwards, the second next, the third long; claws moderate, well arched, compressed, acute. Plumage full, very soft, blended; wings very long, with the second and third quills longest; tail long, of twelve feathers; almost all the species with very large bristles at the base of the upper mandible.

These birds are remarkable for their nocturnal habits, light and rapid flight, and great activity. They feed on insects, although some are said to be frugivorous, and are especially inhabitants of warm climates; several, however, residing during the summer in the colder countries. They nestle on the ground, in caves, or in hollow trees, and generally lay two eggs. The young, at first covered with down, remain until able to fly.

GENUS XX. CAPRIMULGUS. GOATSUCKER.

Bill extremely small, feeble, triangular, depressed; upper mandible compressed toward the very small, deflected tip,

with the edges inflected toward the end; lower mandible with the angle long and very wide, the dorsal line ascending, the crura extremely narrow, the narrow tip curved upwards; gape-line commencing beneath the posterior angle of the eye. Tongue very small, triangular; œsophagus rather wide, without crop; proventriculus large; stomach very large, round, membranous, with the epithelium thin; intestine short; cœca large, oblong, narrow at the commencement. Nostrils linear, with a horny operculum, in the fore part of the large, sparsely feathered, nasal membrane. Eyes very large. Apertures of ears very large, semilunar. Head very large, depressed, flattened above; neck rather short; body very small. Feet extremely small; tarsus very short, feathered anteriorly to near the base; first toe very small, anterior toes webbed at the base, the third much longer; claws very small, arched, compressed, that of the middle toe proportionally longer, curved outwards, and pectinate on its inner thin edge. Plumage full, very soft, blended; large flattened bristles along the base of the bill; wings very long, narrow, with the second quill longest, the first little shorter; tail very long, of ten broad rounded feathers.

The Goatsuckers fly in the dusk, in gloomy weather, or in the shade of woods, or by moonlight, feeding on insects, especially moths and beetles, which they seize on wing. Their feet not being formed for grasping, they seldom perch transversely on a branch. They nestle in a bare place on the ground, laying two broadly elliptical eggs. Species occur in most parts of the globe, but are not numerous in the colder or temperate parts.

36. Caprimulgus europæus. European Goatsucker.

Upper parts grey, minutely dotted and undulated with dusky, and variegated with yellowish-red, the head and back longitudinally streaked with black; lower parts transversely undulated with light red and dusky. In the male, the outer three quills have a large white spot on the inner web, and the two lateral tail-feathers are largely tipped with white. The young in their first plumage are similar to the female, but somewhat darker. The claw of the middle toe has about ten teeth, but frequently the tip is broken.

Male, 11, 23, $7\frac{3}{4}$, $\frac{9}{24}$, $\frac{8}{12}$, $\frac{9}{12}$, $\frac{7}{24}$. Female, $10\frac{1}{2}$, $21\frac{1}{2}$.

The eyes are fixed in the orbits nearly as strictly as in owls, and are much flattened, so that the idea of turning them to look through the semitransparent palate is preposterous. Nor does it fly with open mouth any more than the swallows. It produces a whirring noise at intervals, like the sound of a spinning wheel, and occasionally emits a shrill whistle. During the day it rests on the ground among furze or fern, or on the branch of a tree. The eggs, two in number, are broadly elliptical, an inch and two-twelfths long, ten-twelfths in breadth, white, clouded with ash-grey and brown. The young are at first densely covered with long whitish down, and have no serrature on the claws. It arrives from the middle to the end of May, departs in September, and is generally distributed, but not common.

Fern Owl. Churn Owl. Jar Owl. Dor Hawk. Night Jar, or Night Chur.

Caprimulgus europæus, Linn. Syst. Nat. i. 633.—Caprimulgus europæus, Temm. Man. d'Ornith. i. 436.—Caprimulgus europæus, European Goatsucker, MacGillivray, Brit. Birds, iii. 633.

Having disposed of two orders, we may now pause, and consider what may be next brought forward. Day and night can no longer be adduced in analogy, for most of the other land-birds are strictly diurnal; nor can we, with propriety, force them into a ternary series or circle. The species hitherto described are most expert flyers, but awkward pedestrians. On the principle of affinity, we ought to associate with them all the other birds which are more or less in the same predicament. These are the Bee-eaters and Kingfishers on the one hand, the Shrikes and Flycatchers on the other; birds of which there are few species with us, but which are abundant in the warmer regions of the globe. But the Cuckoos, which form a numerous tribe, although only one species occurs in this country, being so very similar to the Goatsuckers in their digestive organs, must, I think, come next in order. They are, in general, almost as little capable of walking as the birds already described, and belong to a group, of which the habit is to perch on trees or shrubs, whence they glide after passing insects.

ORDER III.

The birds of this order differ from those of any group hitherto described, excepting the Owls, in having the outer toe directed backwards, as well as the first. Feet of this kind have usually been considered as scansorial, because those of the Woodpeckers, eminently climbing birds, have the toes similarly arranged; but the species of this order are incapable of ascending a perpendicular body in the manner of those birds, and the mere circumstance of the reversion of the fourth toe is not at all indicative of such a habit. It is composed of several of the genera which, having zygodactylous and small feet, have usually been arranged by authors with the true Scansores, or Woodpeckers, namely, Bucco, Crotophaga, Cuculus, and perhaps others, with their numerous subdivisions. These birds not having been sufficiently studied by me, I am unable to characterize them in an adequate manner. They are all insectivorous, reside in woods and thickets, among the branches and foliage of which they search for food, have a rapid gliding, buoyant flight, are incapable of walking efficiently on the ground, and are destitute of song. The mouth is wide, the œsophagus narrow and nearly uniform, the stomach thin or moderately muscular, the intestine of moderate length. Such of them as are not permanently resident in warm climates, migrate into them in autumn, the nature of their food preventing their residence during winter in cold countries. In Britain there are representatives of only one family.

FAMILY VII. CUCULINÆ. CUCULINE BIRDS OR CUCKOOS.

Bill long or moderate, wide at the base, compressed toward the end, somewhat arched, and pointed; upper mandible with the ridge obtuse and arcuato-declinate, the edges sharp, notchless, the tip decurved. Tongue of moderate size, flattened, tapering; œsophagus wide, without dilatation; stomach very large, round, with its muscular coat thin, the epithelium soft and rugous; intestine of moderate length and width, with large oblong cœca, as in the Owls. Trachea with a single pair of inferior laryngeal muscles, being slips of the sterno-tracheales. Eyes of moderate size. Nostrils linear, oblong, or circular, direct, in the short bare nasal groove. Feet short, weak, or of moderate strength; tarsus short, with a very large scutella; toes four, scutellate, broad beneath; first small, second shorter than fourth, and united at the base with the third, which is very long, fourth reversed; claws moderate, compressed, curved, acute. Plumage moderately full, the feathers ovate, with a very short plumule; wings long or moderate, much rounded, the first quill short, the third and fourth longest; tail very long, ample, graduated or rounded, of twelve broad feathers.

The Cuculinæ, of which none are permanently resident in countries subject to severe winter cold, feed on insects, worms, and soft fruits, in procuring which they glide among the trees and foliage, leaping from branch to branch, but never climbing in the manner of Woodpeckers or Creepers. They fly with rapidity, but on the ground walk in a constrained and awkward manner.

GENUS XXI. CUCULUS. CUCKOO.

Bill of moderate length, rather slender, arcuato-declinate, broader than high at the base, compressed toward the end,

acute; upper mandible with the dorsal line arcuate, the ridge narrow, the edges with a slight sinus close to the declinate tip; gape-line arcuate. Tongue rather short, slender, emarginate, and minutely papillate at the base, with the tip acute, generally slit and lacerate; œsophagus wide, tapering; proventriculus rather large; stomach large, round, with its muscular coat very thin, and composed of large flattened fasciculi, the cuticular lining soft and rugous; intestine of moderate length, rather wide; cœca large, oblong. Nostrils elliptical, with a prominent margin. Eyes of moderate size. Feet very short; tarsus feathered half-way down, anteriorly broadly scutellate; toes small, broad beneath, the first very small, the fourth reversed, and longer than the second; claws rather small, arched, much compressed, laterally grooved, rather acute. Plumage soft and blended; wings long, straight, pointed, the first quill a third shorter than the second, the third pointed; tail long, graduated, of twelve rounded feathers.

The only species which visits this country is remarkable for depositing its eggs singly in the nests of other birds. Several other species are suspected of doing the same; but the habit is not general in this family, probably not even in the genus Cuculus.

37. Cuculus canorus. Grey Cuckoo.

In both sexes the upper parts bluish-grey, the fore part and sides of the neck ash-grey, the breast and sides of the body bluish-white, transversely barred with brownish-black, the quills dusky-brown, tinged externally with grey, their inner webs barred with white; the tail-feathers greyish-black, spotted along the shafts and on the inner web, and tipped with white. Young with the upper parts transversely barred with light red and clove-brown, the lower with brownish-white and dusky.

Male, 14, 23, 8$\frac{8}{12}$, $\frac{12}{12}$, $\frac{7}{8}$, $\frac{10}{12}$, $\frac{9}{24}$.

This elegantly-formed and agreeably coloured bird, which visits us in the end of April and departs in July or August, is remarkable for its well-known cry, resembling the syllables Coo-coo, and its habit of depositing its eggs in the nests of the Pipit, and other small birds. It is distributed over the whole country, being met with in the most northern parts, and frequents parks and plantations bordered with fields and

pasture-grounds, woods and thickets, in upland valleys, as well as open moors destitute of trees. Being frequently seen abroad at early dawn, sometimes very late in the evening, and having been heard to emit its cry at all hours of the night, it appears to be somewhat nocturnal in its habits. In the structure of its digestive organs it is very intimately allied to the Owls and Goatsuckers. Its food is also similar to them, consisting of insects, and during part of the season of hairy caterpillars. The eggs are very small, averaging from ten to eleven-twelfths of an inch in length, from eight to nine-twelfths in breadth, white, greyish-white, or reddish-white, speckled with ash-grey or greyish-brown. They are deposited singly in the nest of the Meadow Pipit, Hedge Chanter, Pied Wagtail, or some other small bird. When the eggs are hatched, the young Cuckoo throws out of the nest in succession the young of its foster-parents, which are left to perish, and is fed by them until its departure in September.

Common Cuckoo.

Cuculus canorus, Linn. Syst. Nat. i. 168.—Cuculus canorus, Temm. Man. d'Ornith. i. 381.—Cuculus canorus, Grey Cuckoo, MacGillivray, Brit. Birds, iii. 109.

GENUS XXII. COCCYZUS. COWCOW.

Bill nearly as long as the head, slender, arcuato-declinate, broader than high at the base, compressed toward the end, acute; upper mandible with the dorsal line arcuate, the ridge narrow, the edges with a slight notch close to the declinate tip; gape-line arcuate. Tongue very slender, emarginate at the base, with long slender papillæ, the edges lacerated toward the end, the tip rather acute; œsophagus rather wide, tapering; proventriculus rather large; stomach large, round, with the muscular coat very thin, and composed of a single series of small fasciculi, the cuticular lining soft and rugous; intestine of moderate length, rather wide; cœca large, oblong. Nostrils oblong, half-closed by a membrane. Eyes of moderate size. Feet short; tarsus feathered one-third down, rather stout, with seven broad scutella; toes small, broad beneath; the first very small, the third longest, the fourth longer than the second, and reversed; claws rather small, arched, much compressed, laterally grooved, acute. Plumage soft and blended; wings of moderate length, pointed; the first quill a third shorter

than the second, the third longest; tail very long, graduated, of ten feathers.

This genus differs from Cuculus chiefly in having the bill more arched, the nostrils narrower, and not margined, and the tail of ten instead of twelve feathers.

38. Coccyzus americanus. Yellow-billed Cowcow.

Bill brownish-black above, yellow beneath; plumage of the upper parts light greyish-brown, the head tinged with grey, of the lower parts silvery-white; tail-feathers, the middle excepted, brownish-black, tipped with white.

Male, $12\frac{1}{2}$, 16, $5\frac{8}{12}$, $\frac{11}{12}$, 1, $\frac{9}{12}$, $\frac{4}{12}$. Female, $11\frac{3}{4}$, $15\frac{1}{2}$.

In summer generally distributed over the United States of America, whence it retires southward in September. It feeds on insects, larvæ, berries, grapes, and occasionally eggs. The eggs, deposited at different periods, are hatched by the bird itself, so that young birds in various stages, and eggs, may be found simultaneously in the nest. Two individuals of this species have been obtained in England, and two in Ireland.

Yellow-billed Cuckoo. Carolina Cuckoo. Cowbird. Raincrow.

Cuculus americanus, Linn. Syst. Nat. i. 170.—Coccyzus americanus, Audub. Synop. 187.—Coccyzus americanus, Yellow-billed Cowcow, Macgillivray, Brit. Birds, 187.

ORDER IV. JACULATRICES. DARTERS.

Bill large, angular, straight or arched, pointed; upper mandible with very short feathered nasal sinuses, the ridge narrow, the sides sloping, the edges sharp, without notches, the tip acute. Tongue very small, triangular, bluntly pointed; œsophagus very wide, funnel-shaped, without crop; stomach large, round, with the muscular coat very thin, the epithelium soft and rugous; intestine of moderate length, very slender; no cœca; cloaca globular, and large. Eyes and apertures of ears of moderate size; nostrils linear. Feet remarkably small and feeble;

tarsus very short; toes short, and very slender, the first small, broad, and flattened beneath, the anterior three parallel and united in part of their length, or two anterior so united, the fourth directed backwards; claws arched, compressed, acute. Wings broad, rounded, with the first quill extremely small; tail of twelve feathers.

The peculiar form of the bill, and the rapid flight of these birds, have suggested the name which I have given to them. As the feebleness of their feet incapacitates them from walking, they either pursue their insect prey in open flight, or assuming a station, dart from thence upon it. The birds of one genus, Alcedo, feed upon small fishes, after which they plunge in the manner of Gannets. Although only two species occur in Britain, they are numerous in tropical countries. The families into which they may be arranged are ALCEDINÆ, GALBULINÆ, and TROGONINÆ, of which the two latter have the feet zygodactyle. It is only of the first of these families that representatives occur in Britain.

FAMILY VIII. ALCEDINÆ. ALCEDINE BIRDS OR KINGFISHERS.

Body compact; neck short; head rather large, oblong. Bill longer than the head, straight or slightly arched, opening to beneath the middle of the eye, pentagonal at the base, four-sided in the rest of its extent, compressed, and tapering to a point. Tongue very short, fleshy, with the sides nearly parallel, the tip bluntish; œsophagus wide, thin, without crop; stomach very large, roundish, membranous; intestine long, very slender, without cœca. Trachea destitute of inferior laryngeal muscles. Feet very small; tarsus short, bare; toes small, the first directed backwards, the anterior united in part of their extent,

and incapable of spreading; claws well curved, slender, compressed, acute. Plumage blended, but generally firm, and often highly coloured; wings of moderate length, broad; tail of twelve feathers.

These birds belong chiefly to the warmer regions of the globe. They feed upon insects, which they seize on wing, or upon small fishes, on which they dart from a perch. They generally nestle in holes, laying several elliptical white eggs. The young, at first scantily covered with down, remain until fully fledged.

Only a single species of each of two genera occurs in Britain.

GENUS XXIII. ALCEDO. KINGFISHER.

Bill longer than the head, straight, pentagonal at the base, then four-sided, compressed, and tapering to a point; upper mandible with the dorsal line almost straight, the ridge narrow, the side sloping, the edges sharp, and destitute of notch, the tip acute; lower mandible with the angle short and rather acute, the dorsal line ascending and slightly convex, the ridge narrow, the sides sloping outwards, the edges sharp, the tip acute; gape-line straight, commencing beneath the eyes. Both mandibles concave internally, tongue very small, flattened, broad, with the tip suddenly contracted; œsophagus very wide, without crop; stomach large, with a very thin muscular coat, and soft rugous epithelium; intestine of moderate length, very slender; no cœca; cloaca very large, globular. Nostrils linear, direct; nasal membrane short. Eyes of moderate size. Aperture of ear rather small, roundish. Feet remarkably small and feeble; tibia bare below; tarsus extremely short, roundish, with indistinct scales; toes short, very slender, the anterior united to nearly half their length, covered above with indistinct scales; claws arched, compressed, acute. Plumage soft, blended, but firm; feathers oblong; wings rather short, very broad, concave, rounded; primaries not much longer than the secondaries, the first extremely small, the third and fourth longest; tail short, rounded.

The Kingfishers are extensively distributed over the continents of Africa, Asia, part of Europe, the Indian Islands, and Australia. They feed on small fishes and insects, which they procure by darting upon them from an elevated place. They generally nestle in holes, and are of solitary habits.

39. Alcedo Ispida. Halcyon Kingfisher.

Upper part of the head and the wing-coverts dull green, spotted with light blue; middle of the back and the rump glossy light blue; throat and a patch on the side of the neck yellowish-white; lower parts yellowish-red; upper mandible dark brown, as are the margins and tip of the lower, the other parts pale orange; tarsi and toes orange-red, claws dark brown. Adults exhibit considerable differences in the tints of the colours. The young have the upper parts deep bluish-green, the lower yellowish-red, the feet flesh-coloured, shaded with blackish.

Male, $7\frac{1}{4}$, $10\frac{1}{4}$, $3\frac{2}{12}$, $1\frac{1}{2}$, $\frac{9}{24}$, $\frac{13}{24}$, $\frac{3}{12}$. Female, 7, 10.

This beautiful bird is permanently resident, and generally distributed, but no where common, and very rare in the northern parts. It feeds on minnows and other small fishes, nestles in holes in the steep banks of streams, and lays five or six eggs, which are broadly ovate, pure white, eleven-twelfths of an inch in length, nine-twelfths in breadth. Its flight is direct and rapid. Assuming a station on a stone, stump, or rail, it waits an opportunity of darting upon its prey.

Common Kingfisher.

Alcedo Ispida, Linn. Syst. Nat. i. 179.—Alcedo Ispida, Temm. Man. d'Ornith, i. 423.—Alcedo Ispida, Macgillivray, Brit. Birds, iii. 671.

GENUS XXIV. MEROPS. BEE-EATER.

Bill longer than the head, somewhat arched, pentagonal at the base, then four-sided, compressed and tapering to a point; upper mandible with the dorsal line arcuate, the ridge carinate, the sides sloping, the edges sharp, and destitute of notch, the tip acute; lower mandible with the angle short, the dorsal line slightly arcuate, the ridge narrow, the tip acute; gape-line arcuate, commencing beneath the eyes. Both mandibles internally concave, the upper with three prominent lines. Nostrils broadly elliptical, or roundish, nasal membrane short. Eyes of moderate size. Aperture

of ear moderate, roundish. Feet remarkably small and feeble; tibia bare below; tarsus extremely short, roundish, with indistinct scales; toes short, very slender, the anterior parallel and partially united, covered above with distinct scales; claws curved, slender, much compressed, very acute. Plumage blended, but firm; feathers oblong; wings very broad, long, pointed; the primaries much longer than the secondaries, the first extremely small, the second longest; tail long, the two middle feathers generally much longer and pointed.

The Bee-eaters, which are of a more elongated form than the Kingfishers, and for the most part gaudily coloured, belong to the warmer regions of the Old Continent, and its islands. They feed upon insects, have a rapid and buoyant flight, and generally nestle in holes. One species visits this country at irregular intervals.

40. Merops Apiaster. Yellow-throated Bee-eater.

Middle tail-feathers about an inch longer than the rest. Upper part of head, hind neck, and part of the back, brownish-red, that colour fading into yellow on the rump and scapulars; forehead pale blue; loral space and a band behind the eye black; throat rich yellow, that colour bounded by a band of black; lower parts of light green; bill black, feet reddish-brown, claws dusky. Young with the upper parts greenish-brown, a red band above the eyes, the throat dull yellow, without the black band, the tail-feathers of equal length.

Male, $10\frac{3}{4}$, ..., $5\frac{7}{12}$, $1\frac{5}{12}$, $\frac{1}{2}$, $\frac{7}{24}$, $\frac{9}{24}$.

Migrating from Africa to the warmer parts of Europe, it has several times been met with in the south of England, and once even in Galloway, as well as in Ireland. It is gregarious, feeds on insects, which it pursues much in the manner of Swallows, nestles in holes, and lays from five to seven roundish white eggs.

Common Bee-eater.

Merops Apiaster, Linn. Syst. Nat. i. 182.—Merops Apiaster, Temm. Man. d'Ornith, i. 420.—Merops Apiaster, Yellow-throated Bee-eater, Macgillivray, Brit. Birds, iii. 685.

Coming now to the confines of the extensive group of birds which, in moving about in search of food, employ their wings

exclusively, we find some which, graduating into the series of Walking Birds, are in a manner intermediate. Of this kind are the Shrikes, Flycatchers, various other families, of which we have no representatives in Britain, and perhaps the Rollers. The Shrikes are in some respects closely allied to the Hawks, in others to the Thrushes, while they are also intimately connected with the Flycatchers, which are akin to the Swallows.

ORDER V. EXCURTRICES. SNATCHERS.

Body ovate, compact; neck short; head rather large, ovate. Bill short or of moderate length, broad at the base, compressed at the end; upper mandible with a small decurved tip, behind which on either side are a sinus or notch, and a tooth-like process, which is often very prominent. Tongue narrow, flat, emarginate, and papillate at the base, thin-edged, with the point slit, or lacerated; œsophagus wide, without crop; stomach elliptical, moderately muscular, having two distinct lateral muscles, its epithelium dense and rugous; intestine short and wide; cœca very small. Trachea cylindrical, the inferior larynx with four pairs of muscles. Legs very short and small, or moderate; tarsus much compressed, with about seven scutella; toes four, slender, compressed; the first stouter, and with its claw nearly as long as the third, which is united to the second at the base, the lateral toes nearly equal; claws rather long, curved or arched, much compressed, laterally grooved, very acute. Plumage soft, generally blended; wings rather long, rounded, of eighteen quills, the first very small, the third and fourth longest; tail of twelve feathers.

Species of this order occur in all parts of the globe, but their number increases with the temperature, and those which breed in the northern regions migrate southward as winter approaches. The larger species feed on mice, small birds, reptiles, and insects; are shy, ferocious, tyrannical, and unsocial; frequent woods and thickets; and have a rapid, buoyant, and undulating flight. The smaller species feed on insects, some of them also occasionally on small soft fruits. They nestle in trees and bushes, sometimes in holes, and make an elaborate nest, lining it with soft materials. The young, at first blind and bare, remain until able to fly. Three families may be referred to this order: LANIINÆ, MYIOTHERINÆ, PSARINÆ, and CORACIINÆ, the first two being the Shrikes and Flychasers, of which we have a few species, the next the Thick-bills, of which we have none, and the last the Rollers, represented by a single species.

FAMILY IX. LANIINÆ. LANIINE BIRDS OR SHRIKES.

Body compact, moderately full; neck rather short; head large, broadly ovate, or roundish. Bill rather short, or moderate, strong, as high as broad at the base, compressed; upper mandible with the ridge convex, the edges sharp, with well-marked dentiform process and notch, the tip slender, decurved, acute; lower mandible with the tip small, ascending, with a sinus behind it. Mouth rather wide; both mandibles concave; tongue sagittate at the base, tapering, thin-edged, with the tip slit and lacerated; œsophagus of moderate width, without crop; proventriculus oblong, with short cylindrical glandules; stomach elliptical, moderately muscular, the epithelium thin and rugous; intestine short, of moderate

width ; cœca very small and cylindrical. Eyes of moderate size. Nostrils roundish or elliptical. Aperture of ear large. Trachea with four pairs of inferior laryngeal muscles. Legs rather short, of moderate strength ; tarsus rather slender, compressed, with seven anterior scutella, sharp-edged behind ; toes four, rather small, compressed, the outer and middle united at the base ; the first much stouter and long, the lateral nearly equal, all scutellate above ; claws rather long, arched, much compressed, laterally grooved, extremely acute. Plumage soft and blended, the feathers ovate and rounded ; a row of stiffish bristles at the base of the upper mandible on each side ; wings of moderate length, broad, rounded, the first quill very small, the third, fourth, and fifth longest ; tail of twelve feathers.

The Laniinæ are in a manner intermediate between the Myiotherinæ, Turdinæ, Corvinæ, and Falconinæ, of which they combine the characters. They resemble the Falconinæ in their decurved and toothed upper mandible, as well as in their habits, many of the species being addicted to the pursuit of small quadrupeds, birds, and reptiles. Their general food, however, is insects, worms, mollusca, and fruits. They are chiefly natives of warm climates, so that few species occur in Britain, where none are permanently resident.

GENUS XXV. LANIUS. SHRIKES OR BUTCHER BIRDS.

Bill rather short, strong, pentagonal at the base, higher than broad, much compressed toward the end ; upper mandible with its dorsal line convex, the ridge rather narrow, the edges with a marked projection and a sinus, near the considerably decurved, compressed, slender, acute tip ; lower mandible with the tip curved a little upwards, slender, acute. Mouth rather wide ; tongue sagittate at the base, tapering, thin-edged, with the tip slit and lacerated ; œsophagus of

moderate width, without crop or dilatation; proventriculus oblong; stomach elliptical, moderately muscular; its epithelium thin, dense, and rugous; intestine short; cœca very small, and cylindrical; cloaca oblong. Nostrils rather small, roundish, in the fore part of the moderately large nasal sinus, which is covered with bristly feathers directed forwards. Eyes of moderate size. Aperture of ear roundish, and rather large. Body compact; neck short; head large, ovate. Legs rather short, and of moderate strength; tarsus rather slender, compressed, with seven anterior scutella, sharp behind; toes rather small, much compressed, the outer and middle united as far as the second joint, the first stout and long, the lateral nearly equal; claws rather long, arched, much compressed, laterally grooved, extremely acute. Plumage soft and blended, the feathers ovate; stiffish basirostral bristles; wings of moderate length, broad, rather rounded; tail long, straight, rounded, of twelve rather narrow feathers.

The Shrikes are remarkable for their direct affinity to the Falconinæ, exhibited by the structure of their bill, and their rapacious habits, most of the larger species killing small birds, mice, and reptiles, as well as insects, on which latter the smaller species chiefly feed. They are generally unsocial, tyrannical, and courageous birds, with a harsh, screamy voice, and undulating flight. They seldom alight on the ground, but assume a station on a twig, or other perch, whence they sally in pursuit of their prey, or search for it along the thickets and hedges, hovering like hawks. The larger insects they usually impale on a thorn, or fix in the fork of a branch. They form an elaborate hemispherical nest, and lay from four to eight spotted eggs. The young, at first blind and bare, remain until able to fly.

41. Lanius Excubitor. Great Cinereous Shrike.

Male with the upper parts light ash-grey, the lower white; on the side of the head from the nasal membrane to behind the ear, a broad black band, margined above with white; quills brownish-black, their bases white, forming two patches of that colour when the wing is closed; terminal portion of outer scapulars, and tips of all the quills excepting the outer five, white; tail black, the feathers white at both extremities,

the latter colour enlarging towards the sides, so that the lateral feather is entirely white, excepting part of the shaft. Female similar, but with the forehead and breast marked with semi-circular grey lines. The young have the upper parts dark brownish-grey, the tail-coverts faintly barred with dusky, the lower parts greyish-white, tinged with brown, and transversely barred with brownish-grey, the lateral bands on the head brown, the wings and tail blackish-brown, marked with white, but to a less extent than in the adult.

Male, $10\frac{1}{2}$, $14\frac{3}{4}$, $4\frac{8}{12}$, $\frac{9}{12}$, $1\frac{1}{12}$, $\frac{15}{24}$, $9\frac{9}{24}$.

This species is an occasional or accidental visitant, occurring chiefly in the winter season, it being an inhabitant of the northern parts of Europe. It has been found in various parts of England as well as Ireland, and less frequently in Scotland. It preys on insects, frogs, lizards, small birds, and quadrupeds, which it affixes to a thorn, or jams into the fork of a branch, that it may be enabled to tear them up into small morsels.

Grey Shrike. Butcher Bird. Mountain Magpie.

Lanius Excubitor, Linn. Syst. Nat. i. 135.—Lanius Excubitor, Temm. Man. d'Ornith, i. 142.—Lanius Excubitor, Great Cinereous Shrike, Macgillivray, Brit. Birds, iii. 492.

42. Lanius Rutilus. Woodchat Shrike.

Male with the upper part of the head and the hind neck brownish-red, the back black, the scapulars white, the rump grey, the wings black, the bases of the primaries and the tips of the secondaries white, the tail black, excepting the outer feathers, the basal half of the next and its tip, with those of the rest, which are white; a broad black frontal band, margined anteriorly with white; a black cheek-band; the lower parts white. Female with the head and neck dull red, the back brownish-black, the lower parts greyish-white, with transverse brownish lines. Young reddish-brown above, brownish-white, with transverse lines beneath.

Male $7\frac{8}{12}$, . . , $3\frac{10}{12}$; $\frac{15}{24}$, $\frac{11}{12}$; $\frac{13}{24}$, $\frac{4}{12}$. Female, $7\frac{2}{3}$.

Only a few instances of the occurrence of this species in England are recorded. It is abundant in many parts of Africa, visits the European continent in spring, and returns in September and October. Its food consists of insects, and occasionally small birds and quadrupeds.

Woodchat. Wood Shrike.

Lanius rutilus, Lath. Ind. Ornith. i. 70.—Lanius rufus, Temm. Man. d'Ornith, i. 147.—Lanius rutilus, the Woodchat Shrike, Macgillivray, Brit. Birds, iii. 502.

43. Lanius Collurio. Red-backed Shrike.

Male with the back and wing-coverts brownish-red, the crown of the head, hind neck, and rump ash-grey, the breast and sides rose-coloured; a broad band of black from the bill to behind the ear; tail white, towards the end blackish-brown, of which colour are the two middle feathers. Female with the upper parts reddish-brown, the hind neck tinged with grey; the lower parts greyish-white, transversely undulated with dusky. Young dull reddish-brown above, the hind neck and rump tinged with grey, the lower parts greyish-white, the breast and sides with dark brown undulated semicircular lines, of which there are two on each feather.

Male, $7\frac{1}{4}$, 12, $3\frac{9}{12}$, $\frac{1}{2}$, $\frac{10}{12}$, $\frac{13}{24}$, $\frac{3}{12}$. Female, $7\frac{1}{4}$, $12\frac{1}{4}$.

Not uncommon in the southern parts of England, becoming rarer as we proceed northwards, and not hitherto observed in Scotland. It frequents the margins of woods, thickets, and tall hedges, as well as open downs and commons, more or less covered with furze; feeds on insects, and sometimes on birds; nestles in hedges or bushes; and lays five or six eggs, ten and a half twelfths long, seven-twelfths in breadth, light cream-coloured, sometimes tinged with blue, and marked with dots, spots, and small patches of reddish-brown, and pale purplish-grey, generally scattered, but towards the larger end forming a broad ring. It arrives toward the middle of May, and departs in September.

Red-backed Butcher-bird. Flusher.

Lanius Collurio, Linn. Syst. Nat. i. 136.—Lanius Collurio, Temm. Man. d'Ornith.—Lanius Collurio, Red-backed Shrike, Macgillivray, Brit. Birds, iii. 505.

FAMILY X. MYIOTHERINÆ. FLYCHASERS.

Body ovate, compact, or rather slender; neck short; head of moderate size, broadly ovate, rounded above. Bill straight, tapering, depressed, or much broader than high, compressed only at the end; upper mandible with the ridge narrow, the sides sloping and convex, the edges sharp and deflected, the tip very narrow, deflected, generally curved over that of the lower, the notches very small. Mouth wide; tongue triangular, flat, emarginate and papillate at the base, its tip slit and lacerated; œso-

phagus wide at the commencement, rapidly contracting, and then of moderate width; stomach roundish or broadly elliptical, moderately compressed, muscular, with the lateral muscles of moderate size, the epithelium thin, dense, longitudinally rugous; intestine short, rather wide; cœca minute; rectum very short, with an oblong or pyriform dilatation. Trachea considerably flattened, slightly tapering; the inferior larynx with four pairs of muscles, which are generally blended into a knob-like mass on each side. Eyes of moderate size. Nostrils very small, elliptical or roundish, in the anterior part of the broad nasal membrane, which is feathered. External aperture of ear very large, elliptical. Legs very small; tarsus very short, slender, moderately compressed, with seven, often very broad, anterior scutella; toes small, much compressed; the first of moderate length, not much shorter than the third, the second and fourth equal, the third and fourth united at the base, all scutellate; claws long, slender, arched, compressed, laterally grooved, acute. Plumage generally soft and blended. About six strong bristles on each side at the base of the upper mandible, and several smaller on the nasal membrane; wings of moderate length, broad, rounded; tail of twelve feathers, the wings and tail very much in form.

The peculiar form of the bill, with the strong bristles at its base, and the small size of the feet, afford the most prominent characters of this family. The species of which it is composed reside in woods and thickets, among the twigs and foliage of which they search for their insect food, seldom alighting on the ground. Very frequently they take a station on a twig, wall, or stone, from whence they sally forth after passing insects. The larger species also prey upon smaller birds, and in their habits resemble the Shrikes, while the smaller are allied to the Sylviinæ and Motacillinæ. They are numerous in the warmer regions of both continents, and those which breed in the

colder, migrate southward in autumn. Their flight is rapid, their voice harsh and shrill, although some emit modulated sounds. They form a well-arranged cup-shaped nest, and lay four or five spotted eggs. The young remain in the nest until fully fledged.

GENUS XXVI. MUSCICAPA. FLYCATCHER.

Bill of moderate length, straight, broader than high at the base, gradually compressed toward the end, with the ridge rather sharp, the sides sloping, convex toward the end, the notches very obscure, the tip narrow and a little declinate. Mandibles internally moderately concave; mouth rather wide; tongue flat, deeply emarginate, and finely papillate at the base, with the tip slit and lacerated; œsophagus rather wide at first, afterwards of nearly uniform width; stomach a broadly elliptical gizzard, with moderate muscles, and dense, broadly rugous, epithelium; intestine short, rather wide, with two minute cœca. Nostrils elliptical, pervious. Eyes small, eyelids feathered. Aperture of ear elliptical, very large. Head of moderate size, broadly ovate; neck short; body rather slender. Feet short and feeble; tarsus very short, slender, with the seven anterior scutella partly blended; toes small, compressed, the lateral equal; claws rather long, extremely compressed, arched, acute. Plumage soft and blended; long stiff basirostral bristles; wings rather long, broad, rather pointed, the first quill not half the length of the second, which is about the same length as the third. Tail moderate, straight, even, or a little emarginate.

The Flycatchers live on insects, which they generally seize on wing. Their flight is light and quick, when protracted undulatory; but they walk little, and by short hops. Their nests are of moderate size, neatly constructed, and lined with hair or feathers. The female seldom differs much from the male in colour.

44. Muscicapa grisola. Spotted Grey Flycatcher.

Bill black, the base of the lower mandible flesh-coloured; upper parts brownish-grey, the head spotted with dusky brown;

lower parts greyish-white, the neck and fore part of the breast streaked with greyish-brown, the sides and lower wing-coverts light reddish-brown. Young with the bill light brown, the upper parts dull yellowish-grey; the feathers edged with dusky; the wing-coverts, quills, and tail-feathers chocolate brown, the former tipped, the latter margined with pale brownish-red.

Male, $6\frac{2}{12}$, $10\frac{1}{4}$, $3\frac{1}{4}$, $\frac{7}{12}$, $\frac{7}{12}$, $\frac{5}{12}$, $\frac{5}{24}$. Female, 6, 10.

This species, which arrives from the middle to the end of May, and departs in the beginning of October, is generally distributed in England, Scotland, and Ireland, frequenting plantations, low bushy hollows, orchards, and gardens. It usually catches its insect prey on wing, and returns to its station. The nest, which is placed in the hole of a wall or tree, or on a branch, against the wall, is small, compact, composed of straws, moss, and hair, and lined with feathers. The eggs, four or five in number, are nine-twelfths long, six and a half twelfths broad, bluish-white, clouded and spotted with light brownish-red and purplish-grey.

Spotted Flycatcher. Grey Flycatcher. Bee-bird. Cherry-chopper.

Muscicapa grisola, Linn. Syst. Nat. i. 328.—Muscicapa grisola, Temm. Man. d'Ornith. i. 152.—Muscicapa grisola, Spotted Grey Flycatcher, MacGillivray, Brit. Birds, iii. 518.

45. Muscicapa atricapilla. Pied Flycatcher.

Male with the upper parts black; part of the forehead, a patch on the wing, and the outer webs of the two outer tail-feathers on each side, as well as all the lower parts, white. Female and young greyish-brown above, brownish-white beneath.

Male, $5\frac{1}{4}$, 8, $3\frac{2}{12}$, $\frac{11}{24}$, $\frac{8}{12}$, $\frac{11}{24}$, $\frac{3}{12}$. Female, $5\frac{1}{12}$, $3\frac{1}{12}$.

Arrives from the middle of April to the beginning of May, and departs in September. Occurs in various parts of England, but is nowhere common. The eggs are five or six, pale blue, like those of the Redstart, eight and a half twelfths long, and rather more than half an inch in breadth.

Muscicapa atricapilla, Linn. Syst. Nat. i. 396.—Muscicapa luctuosa, Temm. Man. d'Ornith. i. 155.—Muscicapa luctuosa, Pied Flycatcher, MacGillivray, Brit. Birds, iii. 524.

FAMILY XI. CORACIINÆ. CORACIINE BIRDS, OR ROLLERS.

Bill stout, of moderate length, broad at the base, gradually compressed toward the end; upper mandible with the dorsal outline convex, the ridge indistinct, the sides convex, the edges thin, with a faint sinus close to the tip, which is slender and deflected. Mouth wide, the gape-line commencing beneath the eyes. Nostrils basal, rather large, partially concealed by the feathers. Eyes of moderate size. Head large, roundish, or broadly ovate; neck short; body moderately full. Feet small; tarsus very short, rather stout, with seven broad scutella; toes moderate, the second shorter than the fourth; claws moderately curved, much compressed, laterally grooved, acute. Plumage moderately full, blended; bristles at the base of the bill generally strong; wings of moderate length, broad, with the first quill little shorter than the second, the third longest; tail of twelve feathers, of moderate length.

The birds of this family are inhabitants of warm climates, and for the most part gaudily coloured. They are nearly allied to the Laniinæ and Myiotherinæ on the one hand, and to the Turdinæ and Thremmaphilinæ on the other. One species occurs in Britain, but only as a straggler.

GENUS XXVII. CORACIAS. ROLLER.

Bill nearly as long as the head, rather broad at the base, but presently compressed, and higher than broad; upper mandible with the dorsal line slightly arched and declinate, the ridge obtuse, the edges sharp, with a slight sinus close to the small, deflected, rather acute tip; lower mandible with the tip narrow and obliquely truncate; gape-line slightly arched, commencing beneath the eyes. Nostrils

basal, lateral, oblique, linear, partially concealed by the feathers. Eyes of moderate size, with a bare triangular space behind. Feet very short; tarsus with seven very broad scutella: hind toe rather small, second shorter than the third, anterior toes free; claws of moderate length, arched, much compressed, slender, acute. Plumage rather full, blended; several strong decurved bristles on each side of the mouth; wings of moderate length, very broad; the second and third quills longest; tail rather long, of twelve broad feathers, generally even, but sometimes with the outer feathers longer.

The Rollers are peculiar to the Old Continent and its islands, species occurring in the warmer parts of Asia, and in Africa, and one of them extending into Europe.

46. Coracias garrula. Garrulous Roller.

Head, neck, and lower parts light bluish-green; back and scapulars light brown; smaller wing-coverts light blue; quills light greenish-blue at the base, deep bluish-black in the rest of their extent; tail greenish-blue, the outer feathers tipped with black, and about a quarter of an inch longer than the rest. Young dull brown above, greyish-green beneath.

Male, 13, .., $7\frac{7}{12}$, $1\frac{4}{12}$, 1, 1, $\frac{11}{24}$.

The Roller is said to occur in various parts of Asia and Africa, and to extend even as far northward as Denmark and Sweden. Although very rare in Britain, it has been several times obtained in England and Scotland, one having been killed even in Orkney, and another in Shetland. It is said to nestle in hollow trees, or in holes on the banks of rivers, and to lay four or five eggs of a broadly elliptical form, smooth, and of a glossy white.

Common Roller.

Coracias garrula, Linn. Syst. Nat. i. 159.—Coracias garrula, Temm. Man. d'Ornith. i. 127.—Coracias garrula, Garrulous Roller, MacGillivray, Brit. Birds, iii. 540.

The birds described above may be considered as belonging to a group characterized by their inaptitude for walking, and which might therefore be viewed as Aërial, compared with those which follow, and which, being equally well adapted for walking and flying, might be designated as

TERRESTRIAL. These latter may be arranged under eight distinct orders, which differ from each other in various respects, although generally very closely allied in structure. They are all more or less insectivorous, most of them also frugivorous, and some feed so promiscuously as to merit the name of Omnivoræ, given to them by some ornithologists. In all the stomach is muscular, the intestine of moderate length, and the cœca very small, or, in one group, wanting.

ORDER VI. VAGATRICES. WANDERERS.

Birds generally of moderate size, having the body compact, the neck rather short, or of moderate length, the head ovate or oblong. Bill stout, nearly straight, compressed towards the end, tapering, pointed, sharp-edged; the upper mandible with a slight notch or sinus, on each side, close to the tip. Mouth of moderate width; tongue oblong, emarginate and papillate at the base, horny towards the end, thin-edged, with the point slit or lacerated; œsophagus rather wide, without dilatation; stomach a gizzard of moderate power, having distinct lateral muscles, the epithelium thin, dense, and longitudinally rugous; intestine of moderate length and width; cœca very small, cylindrical, adnate; rectum with an oblong dilatation. Nostrils small. Eyes of moderate size. Aperture of ear rather large. Legs of moderate length, rather stout; tarsus moderately long, with from seven to ten anterior scutella; toes four, the three anterior moderately spreading, the first stout, and of the same length as the second and fourth, the outer two united at the base; claws arched, stout, compressed, laterally grooved, acute. Wings of moderate length, rather broad, much rounded, the prima-

ries narrowed toward the end, and separated when the wing is expanded; the first very short, the fourth and fifth longest.

Birds of this order are found in all parts of the globe. They are frequently gregarious; those which feed chiefly on larvæ, worms, or seeds, are always so. Most of the larger species are omnivorous. They walk with ease, leap under excitement, or even run with considerable speed. Their flight is strong, generally performed by regularly timed beats. They nestle and rest in high places, sometimes, however, in holes, even in the ground. The nest of the larger species is rudely, of the smaller neatly, constructed. The eggs, from three to ten in number, are spotted, and the young, at first blind and thinly covered with down, remain until fledged.

FAMILY XII. CORVINÆ. CORVINE BIRDS OR CROWS.

Body ovate, compact, moderately stout; neck short or moderate; head large, oval, rather flattened above. Bill about the length of the head, stout, nearly straight, compressed toward the end; upper mandible with the dorsal line arcuato-declinate, the ridge convex, the edges sharp, with a slight notch or sinus close to the end, the tip slightly deflected. Palate anteriorly with several longitudinal ridges; tongue oblong, emarginate and papillate at the base, flat above, horny and thin-edged toward the tip, which is slit and lacerated; throat of moderate width; œsophagus of nearly uniform width; proventriculus bulbiform; stomach a gizzard of moderate power, elliptical, with the lateral muscles somewhat distinct, the cuticular lining of moderate thickness, and longitudinally rugous; intestine of moderate length; cœca small, cylindrical, adnate; rectum with an oblong or globular dilatation. Eyes

of moderate size, eyelids feathered. Nostrils moderate, broadly elliptical, in the fore part of the broad nasal sinus, and covered by reversed bristly feathers. Aperture of ear round and rather large. Feet of moderate length, stout; tarsus compressed with eight or ten scutella, and two posterior longitudinal plates; toes moderate, scutellate above, padded and granulate beneath; the third and fourth united at the base, the hind toe stronger, but about the same length as the second and fourth; claws rather large, arched, compressed, obscurely grooved, acute. Plumage rather full, on the upper parts compact; wings long or moderate, much rounded, the first quill about half the length of the fourth or fifth, which are longest; tail moderate or elongated, of twelve broad feathers.

The Corvinæ feed on worms, insects, fruits, flesh, fish, and other substances, the stomach being muscular, and with the aid of gravel or particles of quartz, capable of triturating the harder matters. They are cautious and vigilant; walk sedately, fly with considerable speed; and wander to great distances in search of food. They form a bulky, generally rather flat nest, composed of sticks, and lined with soft materials. The eggs, from three to seven, are spotted or freckled, and of an oblong form. The young when fledged are coloured like the adults, but with less gloss. The males and females are alike, the latter somewhat smaller. Species of this family occur in all countries.

GENUS XXVIII. CORVUS. CROW.

Bill rather long, straight, stout, tapering, of nearly equal height and breadth at the base, compressed toward the end; upper mandible with the dorsal line slightly arched, and toward the end declinate, the ridge rather narrow, the edges direct, sharp, with a slight notch or sinus close to the tip, which is somewhat declinate, rather sharp, and projects a little; lower mandible with the angle of moderate length

and width, the dorsal line slightly convex, ascending toward the end, the tip rather acute; gape-line straightish. Mouth of moderate width; upper mandible internally concave, with seven ridges; tongue oblong, emarginate and papillate at the base, flat above, horny, with the tip slit and slightly fimbriated; œsophagus wide, nearly uniform; stomach oblong, compressed, with the muscular coat thick, the epithelium dense, with a few deep longitudinal grooves; intestine of moderate length and width, with the cœca very small and cylindrical; rectum with a globular dilatation. Nostrils roundish, in the fore part of the short nasal sinus, concealed by the narrow reversed stiff feathers, which cover a large portion of the bill. Eyes of moderate size; eyelids feathered. Aperture of ear roundish, moderate. Head large, oblong, rather convex above; neck rather short; body ovate, compact. Legs of moderate length, strong; tarsi rather short, compressed behind, anteriorly with eight scutella, posteriorly with two longitudinal plates; toes of moderate size, the outer adherent to the second joint; the first comparatively large, the lateral equal, the third considerably longer, all with large scutella; claws strong, arched, compressed, rather sharp, the first with an obscure groove on the sides. Plumage generally dense, but soft, and highly glossed; feathers at the base of the upper mandible linear, stiff, and reversed; basirostral decurved bristles; wings long, much rounded, the first quill very short and narrow, the fourth generally longest; tail of moderate length or long, rounded, of twelve broad rounded feathers.

Five permanently resident species occur in Britain, and a single individual of another has been seen in one of the Hebrides. They are for the most part omnivorous in the fullest sense, although each species differs greatly in many of its habits. They search for food in open places, walk in a sedate manner, have a moderately rapid flight, nestle in trees, towers, buildings of various kinds, or rocks, producing from three to nine eggs, which are deposited very early in the season. Their cries vary from a hoarse croak to a caw or chatter, but are considerably varied. They are easily tamed, and may be taught to imitate the human voice.

47. Corvus Corax. Black Raven.

Feathers of the throat lanceolate, distinct, compact, with elongated points; tail much rounded, slightly bent up towards the end; plumage black, splendent, with purplish-blue reflections on the upper, and green on the lower parts. Young with less gloss, but with the colours similar.

Male, 26, 52, .., 3, $2\frac{3}{4}$, 2, $\frac{3}{4}$. Female, 25, 49.

The Raven is more abundant in the northern and western parts of Scotland than in the southern, or in England, in many parts of which it has been extirpated. Its flight is commonly steady and rather slow, but it can urge its speed to a great degree of rapidity. In fine weather it often soars to a vast height, floating as it were over the mountain-tops. It feeds on carcasses of all kinds, stranded fish, crustacea, insects, worms, small quadrupeds, young birds, grain, and other substances. The nest is placed on a rock or tall tree, and is composed of twigs, grass, wool, and feathers, or other materials. The eggs, from four to seven, are about two inches long, an inch and four or five twelfths broad, pale green, with small oblong spots and blotches of greenish-brown and grey. If unmolested, they breed in the same spot year after year. Should one of a pair be killed during incubation, or even after the young have left the nest, the survivor soon finds a mate; which is also the case with the Carrion Crow and Hooded Crow. This species is easily tamed, when it can be taught to modulate its hoarse voice so as to produce some articulate sounds. It is perhaps the most sagacious of all our native birds.

Raven. Crow. Corby.

Corvus Corax, Linn. Syst. Nat. i. 155.—Corvus Corax, Temm. Man. d'Ornith. i. 107.—Corvus Corax, the Raven, MacGillivray, Brit. Birds, i. 498.

48. Corvus leucophæus. Pied Raven.

Feathers of the throat lanceolate, distinct, compact, with elongated points; tail much rounded; bill and feet dusky; claws and tips of mandibles white; head, throat, breast, abdomen, the greater part of the wings, some of the lower tail-coverts, and part of the middle tail-feathers, white; hind neck, back, scapulars, some of the wing-coverts and secondaries, upper tail-coverts, most of the tail-feathers, and some of the elongated feathers on the fore neck, black. The bill in this supposed species is larger than in the Black Raven, being

not only higher at the base, but more elongated, and in form more attenuated at the end. The principal reason for admitting its specific difference is, that all the individuals described by authors agree in the distribution of the colours, although some slight variations occur in them. It is possible, however, that this Pied Raven may be merely a variety of the common or black species.

Male, 25, .., .., $3\frac{4}{12}$, $2\frac{3}{4}$, 2, $1\frac{2}{12}$.

An individual seen by me in the island of Harris, one of the outer Hebrides, is the only one hitherto observed in Britain. It frequented for several weeks the Hill of Northtown, did not associate with other birds, and seemed a neglected or persecuted stranger. The above brief description is taken from a specimen presented to me by Dr L. Edmonstone of Shetland, who procured it from Ferroe, to which this species or variety is peculiar.

White Raven. Ferroe Raven.

Corvus albus borealis, Briss. Ornith. vi. Suppl. 33.—Corvus leucophæus, Temm. Man. d'Ornith. iii. 745.—Corvus leucophæus, Pied Raven, MacGillivray, Brit. Birds, iii. 745.

49. Corvus Corone. Carrion Crow.

Feathers of the throat short, ovato-lanceolate, compact; tail straight, slightly rounded; plumage black, highly glossed, with purple reflections above, and green beneath. Young similar, but less glossy.

Male, 22, $41\frac{1}{4}$, 14, $2\frac{1}{4}$, $1\frac{1}{2}$, $\frac{3}{4}$. Female, 20, 40.

Not very uncommon in many parts of England, Scotland, and Ireland. This species resembles the Raven in its habits, frequenting open moors, hilly pastures, the fields, and shores, and feeding on small quadrupeds, young birds, crustacea, mollusca, worms, grubs, and grain, but especially carrion. It is rather solitary, although occasionally gregarious; nestles in rocks and tall trees, forming a bulky nest, and laying from four to six eggs, which are pale bluish-grey, spotted and blotched with dark umber or clove brown, and purplish-grey, an inch and three-quarters in length, and an inch and two-twelfths in breadth. It is said sometimes to pair with the next species, and some individuals, apparently ignorant of both, have considered them as specifically identical.

Crow. Gor Crow. Black Crow. Corby Crow. Hoody. Bran.

Corvus Corone, Linn. Syst. Nat. i. 155.—Corvus Corone, Temm. Man. d'Ornith. i. 103.—Corvus Corone, Carrion Crow, MacGillivray, Brit. Birds, i. 516.

50. Corvus Cornix. Hooded Crow.

Feathers of the throat short, lanceolate, compact; tail straight, slightly rounded; head, fore-neck, wings, and tail black, the other parts ash-grey. Young with the plumage all dull black, except a broad band of dusky round the fore part of the body.

Male, $10\frac{1}{4}$, 39, 13, $2\frac{2}{12}$, $2\frac{1}{4}$, $1\frac{4}{12}$, $\frac{9}{12}$.

This species is very abundant in most parts of the northern and middle divisions of Scotland, and its islands, but becomes rarer as we advance southward. In many parts of England it is found only during winter. It feeds on crustacea, mollusca, fish, larvæ, worms, insects, young birds, small quadrupeds, and seeds; nestles in rocks and on trees, laying from four to six eggs, an inch and seven-twelfths long, an inch and one-twelfth in breadth, pale bluish-green, with oblong and roundish spots of greenish-brown and pale purplish-grey.

Grey-backed Crow. Grey Crow. Dun Crow. Bunting Crow. Royston Crow. Heedy Crow.

Corvus Cornix, Linn. Syst. Nat. i. 156.—Corvus Cornix, Temm. Man. d'Ornith, i. 109.—Corvus Cornix, Hooded Crow, MacGillivray, Brit. Birds, i. 529.

51. Corvus Frugilegus. Bare-faced Crow, or Rook.

Feathers of the fore part of the head and throat abraded; plumage black, splendent, with purple, blue, and green reflections, that of the neck blended, silky, steel-blue, purple, and green; the bill attenuated towards the tip. Young with the head entirely feathered, the plumage black, less glossy.

Male, $19\frac{1}{2}$, $38\frac{1}{4}$, $12\frac{3}{4}$, $2\frac{4}{12}$, $2\frac{1}{8}$, $1\frac{5}{12}$, $\frac{9}{12}$. Female, $18\frac{1}{2}$, 36.

The Rook is generally distributed, being common in all the cultivated and partially wooded districts of Britain and Ireland. Unlike the preceding species, it is gregarious, often forming vast flocks, which breed together in tall trees, the nestling places being termed rookeries. The nest is large, composed of sticks, and lined with fibrous roots, long straws, wool, and other substances. The eggs, four or five, an inch and ten-twelfths long, an inch and a quarter broad, light greenish-blue, blotched, clouded, spotted, dotted, or freckled with greyish-brown, greenish-brown, and light purplish grey. The young are hatched early in April. This species is more vermivorous than those above described, feeding chiefly on larvæ, earth-worms, and insects, occasionally on grain, potatoes, and other substances, and in very dry or snowy weather frequenting the sea-shore to feed on crustacea and mollusca,

or dead fish. It is easily tamed, and may be taught to imitate various sounds. The young are esteemed good eating, and about the time of leaving the nest afford a barbarous sport to urban as well as rustic shooters. They are fed chiefly with grubs, worms, and seeds, which are conveyed in quantity by their parents in a kind of sac at the base of the tongue. In some rookeries both young and old fly off in June, while in others they remain all the year. In the former case, they generally return for some days in autumn, and again absent themselves until spring.

Corvus frugilegus, Linn. Syst. Nat. i. 156.—Corvus frugilegus, Temm. Man. d'Ornith, i. 110.—Corvus frugilegus, Rook, MacGillivray, Brit. Birds, i. 535.

52. Corvus Monedula. Grey-necked Crow, or Jackdaw.

Bill rather shorter than the head, somewhat conical; plumage greyish-black, the hind neck light grey, the head anteriorly glossed with blue, the primary quills, alula, and tail with green, the secondary quills with purple. The young when fledged are of the same colours as the adult, the grey of the neck a little less pure, and the feathers in general not so glossy.

Male, $14\frac{1}{2}$, 30, 10, $1\frac{1}{4}$, $1\frac{9}{12}$, $1\frac{2}{12}$, $\frac{7}{12}$. Female, 14, 28.

More active and lively, with a clearer and shriller voice than the other species. Generally dispersed, inhabiting deserted buildings, steeples, towers, and high rocks, and breeding in these places, or in rabbit burrows. The eggs, from four to seven, an inch and five-twelfths long, an inch in breadth, bluish-white, with small, round, separated spots of dark brown and pale purplish. Although vigilant and suspicious, it often resides in towns, and picks up part of its food from the streets. It feeds on larvæ, worms, insects, seeds, and other matters. Like the other species, it is easily tamed, may be taught to speak, and has a propensity to carry away and conceal glittering articles.

Daw. Kae.

Corvus Monedula, Linn. Syst. Nat. i. 156.—Corvus Monedula, Temm. Man. d'Ornith. i. 111.—Corvus Monedula, Jackdaw, MacGillivray, Brit. Birds, i. 552.

GENUS XXIX. PICA. MAGPIE.

Bill about the length of the head, stout, straight, tapering, compressed toward the end; upper mandible with the

dorsal line slightly arched, toward the end declinate, the ridge narrow, the edges sharp, with a slight notch or sinus close to the tip, which is declinate, rather sharp, and projects a little. Mouth of moderate width; upper mandible concave within, and grooved; tongue oblong, narrow, emarginate and papillate at the base, flat above, horny, thin-edged, the point slit; œsophagus of moderate width; stomach elliptical, compressed, with the muscular coat thick, the cuticular lining dense, with prominent rugæ; intestine of moderate length and width; cœca small, cylindrical. Eyes of moderate size. Apertures of ears roundish and moderate. Nostrils roundish, rather large, covered by the reversed feathers. Head large, oblong, rather convex above; neck rather short; body ovate, compact; legs of moderate length, strong, tarsi anteriorly covered with eight scutella, posteriorly with two longitudinal plates, and sharp-edged; toes moderate, the outer adherent as far as the second joint; first comparatively large, lateral toes nearly equal, all with a few large scutella; claws strong, arched, compressed, acute, with an obscure groove on each side. Plumage full, soft, blended, and glossed; feathers on the head short; those at the base of the upper mandible linear, stiff, directed forwards, and covering a large portion of the bill; wings of moderate length, much rounded; the first quill very short, extremely narrow, falciform; the fourth and fifth longest; tail very long, graduated, of twelve broad, rounded feathers.

The Magpies closely resemble the Crows in the form of the bill, head, and feet; but differ in having the tail very elongated, and the wings shorter and more rounded. They reside in copses and woods, but search for food chiefly in open places in their vicinity, fly steadily, but with little speed, move on the ground by walking and leaping, and instead of the croak or caw of the crows, have generally a chattering kind of cry. They are omnivorous, vigilant, and cunning; nestle in high places, forming a bulky nest, and laying five or six spotted eggs. They occur on both continents, but are less numerous in America.

53. Pica Melanoleuca. Chattering Magpie.

Plumage of the head, neck, back, fore part of breast, and

abdomen, black; of the rest of the breast, and the outer scapulars white; tail very long, graduated, splendent with green and purple, as are the wings, the greater part of the inner web of the outer quills of which is white. Young similar to the old birds, but with the plumage less dense and glossy.

Male, 18, 24, $7\frac{3}{4}$, $1\frac{4}{12}$, $1\frac{1}{12}$, $1\frac{3}{12}$, $\frac{6}{12}$. Female, 17, 24.

This beautiful bird occurs in all the cultivated and wooded parts of Britain and Ireland. Its food consists of larvæ, worms, insects, mollusca, reptiles, eggs, young birds, small quadrupeds, carrion, sometimes grain and fruits of various kinds. Extremely shy and vigilant when molested, it is much less so in unfrequented places. It walks like the crows, but occasionally leaps in a sidelong direction, emits a chattering cry when alarmed, flies rather heavily, and nestles in trees or bushes, forming a large nest of twigs, covered over or arched, with an aperture on one side. The eggs, from three to six, an inch and five-twelfths long, eleven-twelfths and a half in breadth, pale green, freckled with umber-brown and light purplish-grey, but varying in their tints. Being very destructive to eggs and young birds, it is much persecuted. It is easily tamed, but is troublesome from its superabundant activity, and its propensity to carry off whatever object strikes its fancy.

Common Magpie. Pyet. Pianet. Mag. Madge.

Corvus Pica, Linn. Syst. Nat. i. 157.—Corvus Pica, and Garrulus Pica, Temm. Man. d'Ornith, i. 113, iii. 63.—Pica melanoleuca, Common Magpie, MacGillivray, Brit. Birds, i. 562.

GENUS XXX. GARRULUS. JAY.

Bill shorter than the head, straight, strong, compressed toward the end, rather pointed; upper mandible with the dorsal line declinate and slightly arched, the ridge narrow, the sides sloping, the edges direct, sharp, with a notch or sinus close to the tip, which is rather acute and declinate; lower mandible with the angle of moderate width, the dorsal line ascending and convex, the edges slightly inflected, the tip rather acute; gape-line nearly straight. Mouth of moderate width; upper mandible concave with five or seven prominent lines; tongue oblong, sagittate, flat above, horny and thin at the edges, the tip cleft and lacerated; œsophagus rather wide, nearly uniform; proventriculus bulbiform;

stomach oblong, with the muscular coat not very thick, the inner transversely rugous; intestine of moderate length; cœca very small, cylindrical. Nostrils round, covered by the reversed, shortish feathers. Eyes of moderate size, eyelids feathered. Aperture of ear roundish, of moderate size. Head rather large, oblong, convex above; neck short; body ovate, compact, or rather slender. Legs of moderate length; tarsi rather slender, compressed, with eight or ten scutella; posteriorly sharp with two longitudinal plates; toes of moderate size; the outer adherent at the base, the first large, the outer a little longer than the inner, all with large scutella; claws rather slender, arched, compressed, acute, the first with an obscure groove on the sides. Plumage very soft, blended; feathers at the base of the upper mandible linear, stiff, directed forwards, but much shorter than in the Crows; small decurved bristles; wings moderate, or rather short, the first narrow and about half the length of the fourth and fifth, which are longest; tail long, or moderate, rounded, or graduated, of twelve broad feathers.

The species of this genus are very numerous, and distributed over both continents. They are more properly frugivorous than omnivorous, feeding principally on seeds, nuts, and berries; but they also eat insects, larvæ, eggs, and young birds. They reside in woods and thickets, seldom frequenting exposed places; are shy, suspicious, and when alarmed, clamorous; nestle in trees and bushes, and lay from four to nine speckled eggs. This genus is allied to Pica and Corvus on the one hand, and to Turdus and Parus on the other.

54. Garrulus Glandarius. Blue-winged Jay.

Feathers of the fore part of the head elongated and erectile, wings of moderate length, tail rather long, nearly even; general colour of the plumage light brownish-red, fore part of the head whitish, spotted with black, of which there is a broad band on each side from the base of the bill, primary coverts and alula bright blue, banded with blackish-blue. Young similar to the adult, but with the plumage less firm, and the colours duller.

Male, $14\frac{1}{2}$, 23, $7\frac{1}{2}$, $1\frac{1}{12}$, $1\frac{11}{12}$, $1\frac{2}{12}$, $\frac{15}{24}$. Female, $13\frac{3}{4}$, 22.

Generally distributed in England and the wooded parts of

the southern and middle divisions of Scotland, as well as in Ireland. It feeds on worms, larvæ, snails, seeds, and fruits of various kinds, plunders the nests of small birds, and pounces on mice, and sometimes birds. The nest is built in a copse or hedge; the eggs, from five to seven, somewhat smaller, and of a broader form than those of the Magpie, are an inch and a quarter long, ten and a half twelfths broad, pale bluish-grey, or greyish, faintly freckled with yellowish-brown and pale purplish-grey. Its cry is harsh and varied, and it is said to imitate the notes of other birds.

Common Jay. Jay Pie. Jay Pyet.

Corvus Glandarius, Linn. Syst. Nat. i. 256.—Corvus Glandarius and Garrulus Glandarius, Temm. Man. d'Ornith. i. 114; iii. 65.—Garrulus Glandarius, Blue-winged Jay, MacGillivray, Brit. Birds, i. 576.

GENUS XXXI. NUCIFRAGA. NUTCRACKER.

Bill rather long, moderately stout, conical, slightly compressed, but with the tip depressed; upper mandible with the dorsal line almost straight, being but slightly arcuate, the ridge rather narrow, but convex, the sides very convex, the edges sharp, with a very obscure sinus close to the depressed, obtuse tip: lower mandible with the angle very short, the dorsal line ascending and slightly convex, the edges sharp and inflected, the tip rather blunt and a little depressed; gape-line very slightly arched. Nostrils rather small, round, concealed by the shortish reversed feathers. Eyes of moderate size, eyelids feathered. Aperture of the ear roundish, moderate. Head large, ovate; neck short; body compact: legs of moderate length; tarsi compressed, with eight or ten scutella, posteriorly sharp-edged, with two plates; toes of moderate size, the first large, the second a little shorter than the outer, which is adherent at the base, all with large scutella; claws long, arched, much compressed, acute. Plumage soft and blended; feathers on the head short; those at the base of the upper mandible linear, stiffish, directed forwards; no distinct bristles; wings of moderate length, much rounded, the first quill very short, the fourth longest, the fifth scarcely shorter; tail of moderate length, a little rounded.

This genus, of which only two species are known to me, forms the transition from the Crows to the Starlings.

55. Nucifraga Caryocatactes. Spotted Nutcracker.

Plumage dull reddish-brown, the upper part of the head, wing-coverts, quills, and tail, blackish-brown; all the feathers, excepting those of the head and the tail-coverts, with an oblong white spot, margined with dark brown, at the end; the spots of the lower parts larger; the lower tail-coverts and the tips of the tail-feathers white.

Male, $12\frac{1}{2}$, . ., $7\frac{1}{4}$, $1\frac{3}{4}$.

Although it is said to be common in many parts of the continent, living in the woods of the mountainous districts, it is of very rare occurrence in Britain, where it ranks only as an accidental straggler. It obtains its name from its alleged habit of splitting with its bill the shells of nuts and other hard fruits.

Corvus Caryocatactes, Linn. Syst. Nat. i. 157.—Nucifraga Caryocatactes, Temm. Man. d'Ornith. i. 117.—Nucifraga Caryocatactes, Nutcracker, MacGillivray, Brit. Birds, i. 583.

GENUS XXXII. FREGILUS. CHOUGH.

Bill rather long, slightly arched, rather slender, pentagonal at the base, tapering; upper mandible with the dorsal line slightly arched, the ridge obtuse, the sides flattened, the edges sharp, without notch, the tip slender, flattened, and projecting a little; lower mandible with the angle short, the dorsal line concave, the tip slender, rather acute; gape-line slightly arched. Mouth narrow; tongue slender, sagittate and papillate at the base, with the tip slit and lacerated; œsophagus of moderate width; stomach oblong, with the muscular coat moderately thick, the epithelium dense and rugous; intestine of moderate length and width; cœca very small, cylindrical. Eyes of moderate size. Aperture of ear roundish. Nostrils elliptical, concealed by the short, stiff, reversed feathers. Head of moderate size, ovate; neck rather long; body rather slender; tarsi rather short, compressed, anteriorly with eight scutella, posteriorly with two longitudinal plates, and thin-edged; toes of moderate size, the outer adherent at the base, the first large, the lateral nearly equal, all with large scutella; claws strong, arched,

compressed, rather acute, their sides flattened and erect. Plumage dense, very soft, glossy, blended; feathers of the head short; small decurved bristles; wings long; the first quill very short and narrow, the fourth longest; tail of moderate length, even, of twelve broad truncate feathers.

The Fregili, of which two species occur in Europe, inhabit rocks and towers, where they also nestle, and search the open pastures for worms and insects. They are gregarious, and resemble the Crows and Starlings in their habits.

56. Fregilus Graculus. Long-billed Chough.

Bill longer than the head, attenuated, and with the feet vermilion; plumage black, highly glossed, with purplish-blue and green tints; feathers of the head and neck blended; tail even, about the same length as the closed wings.

Male, 17, 34, $11\frac{3}{4}$, $2\frac{1}{4}$, $2\frac{2}{12}$, $1\frac{1}{4}$, $\frac{8}{12}$.

Occurs in flocks in various parts of England, Ireland, and Scotland, residing in maritime cliffs, and feeding in the pastures on worms, larvæ, insects, and occasionally seeds. Its note is loud and clear, its flight and mode of walking quicker than those of the Crows. It nestles in rocks or caves, laying five eggs, "of a dull white, sprinkled with light brown and ash-coloured spots, most at the larger end."

Chough. Cornish Chough. Cornish Daw. Cornwall Kae. Chauk Daw. Killigrew. Red-legged Crow.

Corvus Graculus, Linn. Syst. Nat. i. 158.—Pyrrhocorax Graculus, Temm. Man. d'Ornith. i. 122.—Fregilus Graculus, Long-billed Chough, MacGillivray, Brit. Birds, i. 537.

FAMILY XIII. GRACULINÆ. GRACULINE BIRDS, OR GRAKLES.

Assuming the genus Gracula of Cuvier as typical or characteristic of a group of birds, allied to the Crows on the one hand, and to the Thrushes on the other, I here substitute the family name of Graculinæ for that of *Thremmaphilinæ*, which I have elsewhere used to designate the same group. Several authors name these birds Sturnidæ, but the genus Sturnus seems to me to be one of the least characteristic. The student who confines his

observation to British Birds cannot, however, form a correct idea of this group, as only two species belonging to it occur with us.

The Graculinæ are inferior in size to the Corvinæ, which they, however, resemble in many respects. Their body is ovate, compact, moderately stout; the neck short; the head of ordinary size, ovato-oblong, rather flattened above. Bill about the length of the head or somewhat shorter, moderately stout or rather slender, nearly straight, somewhat conical, compressed; upper mandible with its dorsal line a little convex near the end, the ridge very narrow at the base, the nasal sinus very large, the edges sharp, with a slight or obsolete notch close to the slightly decurved tip; lower mandible with the angle long, the crura rather broad, the dorsal line nearly straight. Mandibles concave, with a medial prominent line; tongue sagittate, papillate at the base, concave above, horny and thin-edged toward the point, which is narrow and lacerated; œsophagus of moderate width, uniform; proventriculus oblong; stomach elliptical, its muscular coat thick, the cuticular lining dense and rugous; intestine of moderate length and width; cœca small, cylindrical, adnate. Eyes of moderate size; eyelids partially bare, with more or less bare skin behind or around them. Nostrils of moderate size, oval, with a horny operculum; the nasal membrane covered with short incurved feathers. Feet of moderate length; tarsus compressed, with seven anterior scutella, and two posterior plates, forming a thin edge; toes four, the first stout, about the same length as the second and fourth, which latter is adherent at the base, all with large scutella; claws rather long, arched, much compressed, their sides flat, with an obscure groove. Plumage moderately full; feathers at the base of the bill short, rather stiff, incurved; wings of moderate length, rather pointed; first quill extremely short, being scarcely a fifth of the length of the second, the third longest, the

second slightly shorter; tail of moderate length, of twelve feathers.

These birds, which are chiefly resident in the warmer regions of Asia and Africa, scarcely differ in the structure of the skeleton and digestive organs from the Crows. They are generally gregarious, feed on worms, larvæ, insects, and fruits, and breed in high places, or in holes and crevices. They are easily domesticated, may be taught to pronounce words, and to whistle tunes, most of them having naturally a modulated voice, and some being remarkable for their vocal powers.

GENUS XXXIII. THREMMAPHILUS. COWBIRD.

Bill of moderate length, or rather short, moderately stout, nearly straight, compressed toward the end; upper mandible with its dorsal line slightly declinate and convex, the ridge narrow at the base, the edges sharp, with a slight notch close to the slightly decurved tip; lower mandible with the angle long, the crura rather broad, the dorsal line straight, the edges sharp, the tip acute; gape-line ascending at the base, then direct. Eyes rather small; lower eyelid bare. Nostrils elliptical, oblique, open, with an arched horny operculum. Aperture of ear roundish, of moderate size. Head oblong; neck short; body moderate; feet rather stout; tarsus shortish, compressed, with seven anterior scutella, thin-edged behind; first toe stouter, second and fourth about equal; claws rather long, stout, moderately arched, compressed, obscurely grooved, acute. Plumage moderate; feathers on nasal groove very narrow, pointed, recurved; wings of moderate length, rather pointed, the first quill extremely small, being about a sixth of the length of the second, which is little shorter than the third; tail moderate, or rather short, slightly rounded.

The birds of this genus, which is peculiar to the Old Continent, are closely allied to the Starlings and Thrushes, insomuch that the only species which occurs in Britain has been referred by some to Sturnus, by others to Turdus.

They are said to follow cattle assiduously, and to feed on larvæ and insects, especially grasshoppers and locusts.

57. THREMMAPHILUS ROSEUS. ROSE-COLOURED COW-BIRD.

Male with the feathers of the head elongated; the plumage of the body pale rose-coloured, of the head and fore neck black, glossed with purple; wings and tail brownish-black, glossed with green. Female with the colours similar but duller, the crest inconspicuous. Young with the upper parts light brown, the feathers edged with white.

Male, 9, .., $5\frac{1}{4}$, $\frac{9}{12}$, $1\frac{2}{12}$, 1, $1\frac{4}{12}$.

This beautiful bird migrates irregularly into the south of Europe, and sometimes straggles into this country, it having repeatedly been obtained in England, and in a few instances in Scotland. According to Wagler, it lives on insects, especially locusts and grasshoppers, as well as on seeds of various kinds; often mingles with flocks of Starlings, and perching on the backs of cattle, extracts the larvæ of œstri; nestles in holes of trees and of old buildings, laying six eggs.

Rose-coloured Ouzel, Thrush, or Starling.

Turdus roseus, Linn. Syst. Nat. i. 294.—Pastor roseus, Temm. Man. d'Ornith. i. 136, iii. 76.—Thremmaphilus roseus, Rose-coloured Cow-bird, MacGillivray, Brit. Birds, i. 613.

GENUS XXXIV. STURNUS. STARLING.

Bill about the length of the head, straight, rather slender, tapering, pentagonal; upper mandible with its dorsal line straight until near the end, the ridge very narrow at first, then broad and convex, the edges sharp, with a very slight or obsolete notch close to the depressed tip; lower mandible with the crura rather broad at the base, and sloping outwards, the dorsal line straight, the tip narrow; gape-line ascending gently at the base, then direct. Mouth of moderate width; upper mandible concave, with a medial prominent line; tongue sagittate, of moderate length, papillate at the base, slender, horny and thin-edged toward the point, which is narrow and slightly lacerated; œsophagus of moderate width, uniform; stomach broadly elliptical, compressed, muscular, the cuticular lining rugous; intestine of moderate length and width; cœca small, cylindrical. Eyes rather

small, lower eyelids partly bare. Nostrils ovate, operculate. Head ovato-oblong, of moderate size; neck short; body compact; tarsus moderate, compressed, with seven anterior scutella, thin-edged behind; first toe stouter, lateral toes about equal; claws moderately stout, much compressed, laterally grooved, arched, acute. Plumage compact, splendent; feathers on the nasal sinus recurved, on the head and neck lanceolate; wings of moderate length, with the first quill very small and slender, the second slightly shorter than the third, which is longest; tail short, straight, emarginate, and slightly rounded.

The Starlings are of small size, gregarious, and insectivorous. They belong to the Old Continent, but are closely allied to the genus Sturnella, which is peculiar to America, and forms the transition to the conic-billed granivorous birds.

✓ 53. Sturnus guttatus. Spotted Starling.

Adult male with the feathers of the head and neck lanceolate and acuminate, of the other parts broader but tapering; the general colour black with splendent blue and purple tints; all the feathers, unless on the head and fore neck, with a triangular white spot at the tip; bill pale yellow; feet light reddish-brown. In spring the feathers more attenuated, their white tips diminished. Female with the feathers as in the male, but broader, and tipped with broader spots, of which those on the upper parts are light brown, on the lower white; bill dusky, feet reddish-brown. Young of a uniform greyish-brown colour; bill brownish-black, feet dusky.

Male, $9\frac{1}{4}$, $15\frac{1}{2}$, $5\frac{2}{12}$, $1\frac{1}{4}$, 1, $\frac{10}{12}$, $\frac{5}{12}$. Female, $9\frac{1}{4}$, $15\frac{1}{8}$.

The Starling is generally distributed in Britain, but local. It is nowhere more common than in the northern and western Isles of Scotland, where it breeds in caves, crevices of rocks, and holes in the turf. In more southern parts it nestles in hollow trees, old buildings, and rocks. The eggs, from four to six, are of a somewhat elongated oval form, glossy, of a very pale greenish-blue, an inch and a quarter long, ten-twelfths in breadth. It is gregarious, flies with considerable rapidity, walks and runs with ease, searches the pastures for worms, larvæ, and insects, is fond of attending cattle and sheep, on which it sometimes perches. Its song is pleasant, and when tamed it can be taught to whistle tunes, and even to imitate words.

Starling. Stare.

Sturnus vulgaris, Linn. Syst. Nat. i. 290.—Sturnus vulgaris, Temm. Man. d'Ornith, i. 132, iii. 74.—Sturnus guttatus, Spotted Starling, MacGillivray, Brit. Birds, i. 595.

There is no essential difference, as to the structure of the skeleton and digestive organs, between the Corvinæ and Graculinæ, above described, and the group of birds on which we now enter. It appears, however, advisable to keep them apart, for the purpose of facilitating investigation. Those about to be described are all of small size, with the bill slender, and adapted for seizing insects, worms, or soft fruits. They thus differ from the Vagatrices, which have the bill more elongated and stronger; and from the Deglubitrices, in which it is short, stout, and conical. On account of their being pre-eminently musical, we may name them Cantatrices.

ORDER VII. CANTATRICES. SONGSTERS.

Birds of small size, having the body ovate and rather compact; the neck short; the head rather large, and ovate. Bill never longer than the head, nearly straight, slender, or moderately stout, compressed, tapering, pointed; upper mandible with the basal sinuses moderate, filled by a membrane covered by short soft feathers, the dorsal line somewhat convex toward the end, the edges sharp, with a notch or sinus close to the narrow declinate tip; lower mandible with the angle moderate, the dorsal line slightly convex, the edges direct, the tip acute. Mouth of moderate width; tongue short or moderate, narrow, flat, emarginate and papillate at the base, thin-edged, with the point slit or lacerated; œsophagus narrow, without dilatation; proventriculus oblong; stomach roundish, or broadly

elliptical, compressed; its muscular coat thick, and forming two distinct lateral muscles, its cuticular lining dense, tough, and slightly rugous; intestine short, rather wide; cœca very small, cylindrical, adnate; rectum with an elliptical dilatation. Eyes of moderate size. Nostrils oblong, or linear, direct. Aperture of ear large, roundish. Legs of ordinary length, or short; tarsus much compressed, with about seven anterior scutella, and two longitudinal plates behind; toes four, compressed, the three anterior slightly spreading; the first stouter, the lateral about equal, the third and fourth adnate at the base, all scutellate; claws rather long, arched, slender, compressed, laterally grooved, tapering to a fine point. Wings of moderate length, broad, with the first quill extremely small, sometimes wanting, the third and fourth longest; tail of twelve feathers.

The Cantatrices are remarkable for their finely modulated song. Their trachea is nearly uniform, with four pairs of inferior laryngeal muscles, but does not differ from that of the Vagatrices or Deglubitrices. Species occur in all parts of the globe. Their food consists chiefly of insects, larvæ, worms, mollusca, and soft fruits. They generally advance by leaping, although some run; but none walk in the sedate manner of the Vagatrices. Their flight is generally rapid, light, and undulated. In summer they are unsocial, in winter often gregarious. Very many are migratory, being unable to procure subsistence in cold climates in winter. They may be arranged into several groups, of which those that have representatives with us are the ORIOLINÆ, MYRMOTHERINÆ, TURDINÆ, SAXICOLINÆ, SYLVIINÆ, MOTACILLINÆ, ALAUDINÆ, AMPELINÆ, and PARINÆ. These groups differ only in circumstances of little essential importance, their internal organization

being very similar; and, therefore, it will suffice to give their principal characters, especially as we have very few species of most of them.

FAMILY XIV. ORIOLINÆ. ORIOLINE BIRDS, OR ORIOLES.

Bill rather long, stout, nearly straight, rather broad at the base, compressed toward the end; upper mandible with the dorsal line slightly arched, the ridge narrow, the edges sharp, with a slight notch close to the small deflected tip; lower mandible with the angle of moderate length, the sides nearly erect, the edges sharp, the dorsal line nearly straight, the tip acute. Mouth of moderate width; tongue slender, emarginate and papillate at the base, thin and horny toward the tip, which is bifid. Nostrils oblong. Head oblong, of moderate size; neck rather short. Tarsus short, or moderate, compressed, with seven anterior scutella; toes of moderate size, with large scutella, the first stout, the fourth a little longer than the second, and united at the base to the third; claws of moderate length, arched, compressed, laterally grooved, acute. Plumage generally blended; short bristles; wings rather long, the first quill scarcely half the length of the third, which is longest; tail rather long, straight, slightly rounded.

The Oriolinæ belong to the warmer regions of the Old Continent.

GENUS XXXV. ORIOLUS. ORIOLE.

Bill rather long, stout, nearly straight, as broad as high at the base; upper mandible with the ridge narrow, the sides sloping at the base. Tarsus short, compressed, with seven distinct scutella; toes of moderate size, the anterior little spreading, being united at the base; claws of ordinary length, arched, acute. Wings rather long, the first quill short, the third and fourth longest; tail of moderate length, straight, rounded.

The Orioles appear to be allied to the Rollers; not only the form of their bill, but also their short tarsi and broad toes indicating this affinity. They belong to Africa, the warmer parts of Asia, and New Holland. One species appears in Britain, as an occasional or accidental visitor.

59. Oriolus Galbula. Golden Oriole.

Male with the plumage bright yellow, the wings black, the primary coverts and all the quills excepting the first and second, tipped with yellow; the tail-feathers black, tipped with yellow, the space of the latter colour enlarging from the medial to the lateral feathers; the loral space black. Female greenish-yellow above, yellowish-white beneath, marked with longitudinal dusky lines; wings and tail brown, tipped with yellow. Young dusky yellowish, grey above, each feather with the centre olive-brown; yellowish-white beneath, with linear brown streaks.

Male, $9\frac{1}{2}$, .., $6\frac{2}{12}$, $1\frac{1}{12}$, 1, $\frac{9}{12}$, $\frac{5}{12}$. Female, $9\frac{2}{12}$.

The Golden Oriole is said to arrive in the south of Europe about the end of spring, and to extend over France and many parts of Germany, but to be rare in the northern countries. It has occurred in several counties in England, and in a few instances in Ireland.

Oriolus Galbula, Linn. Syst. Nat. i. 160.—Oriolus Galbula, Temm. Man. d'Ornith. i. 129.—Oriolus Galbula, Golden Oriole, MacGillivray, Brit. Birds, ii. 73.

FAMILY XV. MYRMOTHERINÆ. MYRMOTHERINE BIRDS, OR ANTCATCHERS.

The birds of this family are distinguished from the Thrushes chiefly by their shortened form. Bill rather short, moderately stout, straight, with the dorsal line convexo-declinate, the tip narrow, the edges of the upper mandible slightly notched near the end. Mouth of moderate width. Feet rather long and stoutish; tarsus compressed, with large distinct scutella; toes of moderate size, the first stouter, and nearly as long as the second, the fourth a little longer, and united at the base; claws moderate, arched, compressed, laterally grooved, acute. Wings

short, broad, concave, rounded; the first quill very short and narrow, the second and third longest; tail always short, convex above, even or rounded.

The Myrmotherinæ belong chiefly to the warmer regions of the globe; but the genus to which is referred the only British species, is composed of birds that inhabit cold and temperate countries.

GENUS XXXVI. CINCLUS. DIPPER.

Bill rather short, slender, compressed, slightly bent upwards, much compressed toward the end; the edges sharp; an obscure notch close to the narrow, slightly deflected tip. In old birds, the tip worn, so as to obliterate the notches, and render the extremity abrupt and somewhat wedge-shaped. Mouth very narrow; tongue sagittate, narrow, grooved, bristly on the margins, toward the end, and terminating in two bristle points; œsophagus of nearly uniform width; stomach roundish, compressed, muscular, its epithelium dense and rugous; intestine of moderate length and width; cœca very small, cylindrical. Nostrils linear, direct. Eyes rather small, eyelids densely feathered. Aperture of ear roundish, of moderate size. Head oblong, rather small, compressed; neck rather short, body full; tarsus of moderate length, compressed, rather stout, covered anteriorly by a long undivided plate, and four anterior scutella, posteriorly sharp, with two long plates; toes rather large, the first, second, and fourth nearly equal, the anterior connected by basal webs; claws rather long, arched, much compressed, laterally grooved, in old birds blunted. Plumage rather compact, on the fore part of the head short, blended; no bristles; wings rather short, broad, convex, rounded; the first quill very short, the third longest; tail short, even, slightly decurved.

The birds of this genus are placed on the limits of the family, and are nearly as much allied to the Thrushes. They are remarkable for their habit of procuring their food at the bottom of streams.

✓60. Cinclus europæus. European Dipper.

Head and hind neck deep-brown, both eyelids with a white

speck, upper parts dark grey, the feathers broadly margined with black, throat and fore neck white, breast brownish-red, quills and tail dark brown tinged with grey. Young with the upper parts all grey, the feathers margined with black, fore neck and breast white, undulated with dusky.

Male $7\frac{3}{4}$, $12\frac{1}{2}$, $3\frac{3}{4}$, $\frac{9}{12}$, $1\frac{2}{12}$, $\frac{11}{12}$, $\frac{4}{12}$. Female, $7\frac{1}{4}$, 12.

The Dipper is generally distributed in Britain, but is much more plentiful in Scotland. It frequents running waters, perches on stones or on the banks, descends to the bottom in search of its food, which consists of mollusca and insects, has a rapid, direct flight, and is of a rather solitary disposition. The nest, which is placed near the water, is of enormous size, arched over, but broader than high, with the aperture in front, and composed externally of moss, internally of grass, and lined with beech or oak leaves. The eggs, five or six, oval, rather pointed, pure white, about an inch in length, nine-twelfths in breadth. The young, when nearly fledged, on being disturbed, leave the nest, and plunge into the water.

Water Ouzel. Water Crow. Water Piet. Dipper. Ducker. Kingfisher.

Sturnus Cinclus, Linn. Syst. Nat. i. 290.—Cinclus aquaticus, Temm. Man. d'Ornith, i. 177.—Cinclus europæus, European Dipper, MacGillivray, Brit. Birds, ii. 50.

FAMILY XVI. TURDINÆ. TURDINE BIRDS, OR THRUSHES.

Body moderate; neck rather short; head oblong, compressed. Bill shortish or moderate, rather strong, straight, compressed toward the end; upper mandible with the dorsal line a little convex and declinate, the edges sharp, with the notches small, the tip declinate, rather acute; lower mandible with the angle of moderate length, the dorsal line ascending and slightly convex, the tip narrow. Nostrils oblong, operculate, nasal sinus feathered. Eyes of moderate size, eyelids feathered. Aperture of ear large, roundish. Mouth of moderate width; tongue sagittate, slender, tapering, its edges thin and bristly, the tip slit; œsophagus rather narrow, uniform; proventriculus oblong; stomach a gizzard of moderate strength, its

muscles distinct; intestine of moderate length ; cœca very small, cylindrical. Tarsus moderate or rather long, compressed, with seven scutella ; toes rather strong, compressed ; the first stronger, the lateral nearly equal, the third and fourth united at the base ; claws rather long, arched, compressed, laterally grooved, acute. Plumage ordinary, rather blended, the feathers rounded ; short bristles ; wings of moderate length, broad, rounded ; the first quill very small, the third and fourth longest ; tail moderate or long.

The Turdinæ, of which species occur in all countries, feed on insects, worms, and soft fruits, for which they search the open pastures, generally repose in the thickets and woods, have a moderately rapid, somewhat undulated flight, and on the ground advance by leaping. The nests are cup-shaped, and neatly constructed ; the eggs five or six. Many of the species are remarkable for their superiority of song.

GENUS XXXVII. TURDUS. THRUSH.

Bill of moderate length, rather slender, straight, compressed ; upper mandible with the ridge rather narrow, the dorsal line slightly arched, the sides convex, the edges sharp, with an obscure notch close to the small, rather obtuse tip ; lower mandible with the angle moderate, the dorsal line convex, the tip rather acute ; gape-line nearly straight. Mouth rather narrow ; upper mandible internally narrow, with a medial prominent line ; tongue sagittate and papillate at the base, tapering, slender, concave above, thin-edged, bristled, with the point slit ; œsophagus rather narrow, uniform ; stomach broadly oblong, compressed, its muscular coat rather thick, with distinct muscles, the epithelium dense, longitudinally rugous ; intestine of moderate length and width ; cœca very small, cylindrical. Nostrils elliptical, direct, in the lower and fore part of the nasal membrane, which is feathered. Eyes of moderate size, eyelids feathered. Aperture of ear rather large, roundish. Head oblong, of moderate size ;

neck ordinary; body compact; legs rather slender; tarsus moderate, compressed, anteriorly with a long plate and four scutella, posteriorly with two longitudinal plates; toes of moderate length, with large scutella; the third and fourth slightly connected at the base, the lateral about equal; claws slender, compressed, laterally grooved, arched, acute. Plumage rather blended; short basirostral bristles; wings of ordinary length or rather long, rounded; first quill extremely small, third and fourth longest; tail moderate, or rather long, slightly emarginate.

The Thrushes feed on worms, larvæ, insects, mollusca, soft fruits and seeds. Their mode of progression on the ground is by leaping, their flight moderately rapid, and somewhat undulatory. They are remarkable for the mellowness of their song. Seven species, of which three are resident, occur in Britain.

61. Turdus Merula. Black Thrush, or Blackbird.

Male with the bill yellow, the feet dusky, the plumage black. Female with the bill and feet dusky, the plumage deep brown above, lighter beneath, the throat and fore neck pale brown, streaked with darker. Young dusky-brown above, with dull yellowish streaks, yellowish-brown above, spotted with dusky.

Male, $10\frac{3}{4}$, 16, $5\frac{5}{12}$, $\frac{10}{12}$, $1\frac{3}{12}$, 1, $\frac{5}{12}$. Female, 10, 15.

The Blackbird occurs in all the wooded and cultivated tracts of England, Scotland, and Ireland, in winter frequenting the neighbourhood of houses and towns, resorting to woods, hedges, and gardens, and feeding upon snails, worms and seeds. Its flight is steady, but along the hedges wavering and fitful. It has a loud chuckling cry, and mellow, loud, clear song, which continues from the beginning of spring to the middle of July. The nest is bulky, composed of grass, moss, and other materials, lined with mud, within which is a layer of fibrous roots, grass, and sometimes leaves. The eggs, generally five, are pale bluish-green, freckled with pale umber, but vary in colour and form; their average length an inch and a twelfth, their breadth ten-twelfths. Permanently resident.

Ouzel. Garden Ouzel. Merle.

Turdus Merula, Linn. Syst. Nat. i. 295.—Turdus Merula, Temm. Man. d'Ornith. i. 168, iii. 90.—Turdus Merula, Black Thrush, or Blackbird, MacGillivray, Brit. Birds, ii. 81.

62. Turdus torquatus. White-breasted Thrush, or Ring-ouzel.

Male with the bill yellow, the feet olive-brown, the plumage blackish-brown, the feathers margined with grey; a broad semilunar patch of white on the fore part of the breast. Female similar, but of a duller and lighter tint, with more grey on the wings, the white band tinged with brown. Young dusky, the feathers of the upper parts tipped with black, of the lower barred with yellowish-white.

Male, $11\frac{1}{2}$, 19, $5\frac{9}{12}$, $\frac{11}{12}$, $1\frac{5}{12}$, $1\frac{1}{12}$, $\frac{9}{24}$. Female, $10\frac{1}{2}$, 18.

This species, which arrives in April, and departs in October, betakes itself to the hilly and mountainous districts of England, Scotland, and Ireland. It feeds on worms, snails, insects, and berries; forms a nest like that of the Blackbird, and lays from four to six eggs, which are pale bluish-green, freckled all over with pale brown.

Ring Ouzel. Rock Ouzel. Tor Ouzel. Mountain Ouzel or Blackbird. Moor Blackbird. White-breasted Blackbird.

Turdus torquatus, Linn. Syst. Nat. i. 296.—Turdus torquatus, Temm. Man. d'Ornith. i. 166.—Turdus torquatus, Ringed Thrush or Ring Ouzel, MacGillivray, Brit. Birds, ii. 100.

63. Turdus Pilaris. Chestnut-backed Thrush, or Fieldfare.

Head, hind-neck, and rump, grey; fore part of the back chestnut; space before the eye brownish-black; a whitish line over the eye; fore neck and breast reddish-yellow; the feathers tipped with a brownish-black elongated triangular spot; those of the sides with large dusky spots and margined with white; lower wing-coverts and axillar feathers pure white. Young of the year with duller tints, the feathers of the sides light, with a pale brown or dusky border within the white margin.

Male, $10\frac{3}{4}$, $17\frac{1}{2}$, $5\frac{3}{4}$, $\frac{9}{12}$, $1\frac{1}{4}$, $\frac{11}{12}$, $\frac{9}{24}$. Female, $10\frac{1}{2}$, $16\frac{1}{2}$.

The Fieldfare arrives from the north of Europe in the end of October, and returns in the end of April. It is generally dispersed in large flocks, and feeds on worms, snails, insects, and berries, as well as seeds. It roosts on the ground, as well as on trees. In form it closely resembles the Black-bird, but in colour is more allied to the species which follow.

Feltyfare. Feldyfar. Feltyflier. Grey-Thrush.

Turdus pilaris, Linn. Syst. Nat. i. 291.—Turdus pilaris, Temm. Man. d'Ornith. i. 163.—Turdus pilaris, Chestnut-backed Thrush or Fieldfare, MacGillivray, Brit. Birds, ii. 105.

64. TURDUS VISCIVORUS. MISSEL THRUSH, OR SHRITE.

Upper parts light brown, tinged with grey, the fore part of the head greyish, the rump shaded with ochre-yellow; secondary coverts and tail-feathers tipped with greyish-white, a cream-coloured band from the base of the bill over the eye, the loral space greyish-white; the lower parts yellowish-white, each feather tipped with a black spot; the spots on the neck triangular, those on the breast larger and transversely oblong; the lower wing-coverts and axillar feathers white.

Male, $11\frac{1}{2}$, $19\frac{1}{2}$, $6\frac{1}{2}$, $\frac{10}{12}$, $1\frac{3}{12}$, $\frac{11}{12}$, $\frac{9}{24}$. Female, 11, 19.

Permanently resident; but flocks arrive in October and depart early in May. Common in England, Scotland, and Ireland. Gregarious in winter, feeding in the open fields, on worms, larvæ, and seeds. Nestles in bushes or on trees; the nest bulky, plastered internally with mud, and lined with roots, grass, and moss; the eggs, four or five, an inch and three-twelfths long, ten-twelfths in breadth, flesh-coloured or purplish-white, with scattered spots of light brownish-red and pale purplish-red. Its song resembles that of the Blackbird, but its notes are less mellow and modulated.

Mistle Thrush. Grey Thrush. Holm Thrush. Screech Thrush. Storm-cock.

Turdus viscivorus, Linn. Syst. Nat. i. 291.—Turdus viscivorus, Temm. Man. d'Ornith. i. 161.—Turdus viscivorus, Missel Thrush, or Shrite, MacGillivray, Brit. Birds, ii. 114.

65. TURDUS MUSICUS. SONG THRUSH, OR MAVIS.

Upper parts yellowish-brown, the head tinged with red; secondary coverts and first row of small coverts tipped with reddish-yellow; fore part of neck and breast yellowish, each feather terminated by a triangular brownish-black spot; lower wing-coverts reddish-yellow. Young with the feathers of the back and wings streaked and tipped with ochre-yellow.

Male, 9, 14, $4\frac{7}{12}$, $\frac{9}{12}$, $1\frac{3}{4}$, $\frac{10}{12}$, $\frac{7}{24}$. Female, $8\frac{1}{2}$, 12.

Generally distributed in Britain and Ireland, occurring even in the bare northern isles, as well as in the wooded and cultivated parts. It is permanently resident; feeds on worms, insects, snails, and berries; becomes somewhat gregarious in winter. The song of this species surpasses that of the other British Thrushes. Its nest is lined with cow-dung, or particles of decayed wood, or mud, without any covering. The eggs, generally five, are bright bluish-green, with scattered roundish spots of brownish-black; their length about an inch, their breadth nine-twelfths.

Thrush. Throstle. Mavis.

Turdus musicus, Linn. Syst. Nat. i. 292.—Turdus musicus, Temm. Man. d'Ornith. i. 164.—Turdus musicus, Song Thrush, or Mavis, MacGillivray, Brit. Birds, ii. 127.

66. TURDUS ILIACUS. RED-SIDED THRUSH, OR REDWING.

Upper parts deep hair-brown, inclining to olive; a blackish-brown spot before the eye, a large whitish band over it; secondary coverts tipped with greyish-white; fore part of neck and breast white, with longitudinal streaks of blackish-brown and pale brown; middle of the sides and lower wing-coverts light red.

Male, $8\frac{3}{4}$, 14, $4\frac{1}{2}$, $\frac{7}{12}$, $1\frac{2}{12}$, $\frac{10}{12}$, $\frac{11}{24}$. Female, $8\frac{1}{4}$, $13\frac{1}{2}$.

Arrives from the north in the end of October, and departs in the beginning of May. Gregarious, frequenting the open fields, where it feeds on worms and larvæ; and during snow, betakes itself to the hedges and thickets, to eat the hawthorn and holly berries. It roosts on trees, flies with rapidity, and is generally shy and vigilant.

Wind Thrush. Swinepipe.

Turdus iliacus, Linn. Syst. Nat. i. 292.—Turdus iliacus, Temm. Man. d'Ornith. i. 165.—Turdus iliacus, Red-sided Thrush, or Redwing, MacGillivray, Brit. Birds, ii. 141.

67. TURDUS VARIUS. VARIEGATED THRUSH.

Bill large; wings of moderate length, with the second and sixth quills equal, the fourth longest, but the third and fifth scarcely shorter; tail even; upper parts yellowish-brown, lighter behind, lunulated with brownish-black; loral space and throat white; sides and lower fore part of the neck, breast, and sides of the body yellowish-white, lunulated with brownish-black.

Adult, $10\frac{3}{4}$, . ., $5\frac{3}{12}$, $1\frac{1}{12}$, $1\frac{2}{12}$, $\frac{10}{12}$, $\frac{4}{12}$.

The bill of this species being a little larger, and its wings a little shorter than those of some others, it has been proposed to separate it generically under the name of *Oreocincla*, or Mountain Thrush. It was found by Dr Horsfield in the forests of a mountain in Java, and is said to occur in various parts of India, Japan, and Australia. Mr Yarrell states, that a specimen shot in the New Forest, Hampshire, appears to be identical with Dr Horsfield's *Turdus varius*, and his description agrees in all essential respects. Why, then, does he name this Hampshire bird *Turdus Whitei?* Another Thrush, shot by the Earl of Malmesbury, at Heron Court, near Christ-

thurch, although generally similar, differs in the form of the wing, and is said to agree with a Hamburgh specimen figured and described by Mr Gould under the name of *Turdus Whitei*. Not having examined these two specimens, I cannot decide upon their identity or dissimilarity. M. Temminck holds them to be the same; but in very many instances he has made similar assertions, and yet afterwards altered his mind.

Turdus varius, Horsf. Zool. Res. in Java.—Turdus Whitei, White's Thrush, Eyton, Rarer Brit. Birds, 92.—Turdus varius seu Whitei (Gould), Temm. Man. d'Ornith. iv. 602.—Turdus varius, Variegated Thrush, MacGillivray, Brit. Birds, ii. 146.

FAMILY XVII. SAXICOLINÆ. SAXICOLINE BIRDS, OR STONECHATS.

Body rather compact; neck short; head rather large, broadly ovate, anteriorly convex. Bill rather short, straight, slender, tapering, depressed at the base, compressed toward the end; upper mandible with the tip slender, slightly decurved, the notches obsolete. Tongue of moderate length, slender, emarginate and papillate at the base, horny toward the end, with the edges lacerate, and the tip slit; œsophagus of nearly uniform width; stomach of moderate size, roundish or elliptical, compressed, its lateral muscles rather thick, the cuticular lining tough, thin, and longitudinally rugous; intestine of moderate length and width; cœca very small, oblong. Legs of moderate length; tarsus slender, compressed, anteriorly covered with a long plate, in which the divisions of the scutella are sometimes distinctly marked; toes moderate, compressed, scutellate, the first strong, the lateral equal; claws rather large, arched, compressed, acute. Plumage blended; bristles small; wings of moderate length, broad; the first quill small, the next three longest, the last three secondaries gradually shorter; tail of moderate length.

The Saxicolinæ, being intimately allied to the Turdinæ, Alaudinæ, and Sylviinæ, present no abrupt and decided characters, by which they can be easily defined. They

reside chiefly in stony places and open pastures, especially those covered with small shrubs, but some frequent woods and thickets. On the ground they advance by hopping; their flight is moderately rapid; they feed on insects and worms; form large nests, lined with soft materials, and lay five or more eggs, generally blue. Most of them are migratory.

GENUS XXXVIII. ACCENTOR. CHANTER.

Bill short, straight, somewhat conical, slender, a little broader than high at the base, compressed toward the end; upper mandible with its dorsal line declinate and nearly straight, the ridge narrow at the base, then convex and somewhat flattened, the edges with a very slight notch close to the slightly declinate, narrow, and rather obtuse tip; lower mandible with the edges involute. Mouth rather narrow; tongue short, sagittate, narrow, terminated by two acute points; œsophagus of moderate and nearly uniform width; proventriculus oblong; stomach rather large, roundish-elliptical, compressed, its lateral muscles thick, the cuticular lining dense and longitudinally rugous; intestine of moderate length and width; cœca very small, oblong. Eyes of moderate size. Nostrils longish, linear, in the fore part of the large nasal sinus, of which the membrane is bare anteriorly. Aperture of ear large, roundish. Head rather small, ovate; neck short; body ovate. Legs of ordinary length, rather slender; tarsus compressed, with seven anterior scutella; toes of moderate length, much compressed; the first large, the lateral nearly equal, the third and fourth united at the base, all scutellate; claws rather long, arcuate, much compressed, laterally grooved, acute. Plumage soft, blended, slightly glossed; no distinct bristles; wings rather short, broad, much rounded, of eighteen quills; the first very small, the fourth and fifth longest; tail rather long, slightly arcuate, rounded.

This genus is intimately allied to Turdus, Sylvia, and Saxicola, from which it differs chiefly in the involution of the edges of the lower mandible. The stomach being very muscular, the species are partly granivorous.

68. Accentor alpinus. Alpine Chanter.

Light brownish-grey; the back with large dusky spots, the wing-coverts dusky, with a terminal white spot; throat white, with small triangular black spots, sides brownish-red; bill dusky, lower mandible yellowish-white for three-fourths of its length. Female similar to the male.

Male, 7, . . , $3\frac{3}{12}$, $1\frac{5}{12}$, $1\frac{1}{12}$, $\frac{8}{12}$, $\frac{3}{12}$.

Of frequent occurrence in the mountainous parts of the south of Europe. Three individuals have been shot in England; the first, in November 1822, in the garden of King's College, Cambridge, and now in Dr Thackery's collection. Its food consists of insects and seeds, and it breeds in rocky places, laying five light greenish-blue eggs. In its habits it resembles the next species.

Alpine Accentor. Collared Starling.

Motacilla alpina, Gmel. Syst. Nat. i. 806.—Accentor alpinus, Temm. Man. d'Ornith, i. 248.—Accentor alpinus, Alpine Chanter, MacGillivray, Brit. Birds, ii. 258.

69. Accentor modularis. Hedge Chanter.

Upper part of the head and neck grey, streaked with brown; back reddish-brown, with dark brown spots; fore neck and breast dull ash-grey, sides streaked with brown; upper mandible brownish-black, lower flesh-coloured, with the tip dusky; feet brownish-yellow, toes darker, claws wood-brown. Female similar, but with the grey of the neck and breast duller and tinged with brown, and the rump more olivaceous. Young with the upper parts confusedly mottled with dusky and light brownish-red, the lower parts light yellowish-grey, streaked with dusky.

Male, $6\frac{1}{4}$, $8\frac{3}{4}$, $2\frac{7}{12}$, $2\frac{10}{12}$, $\frac{5}{12}$, $\frac{15}{24}$, $\frac{2}{12}$. Female, 6, $8\frac{1}{2}$.

This plainly coloured, modest, quiet, and familiar bird is generally distributed in Britain and Ireland, frequenting gardens, hedges, and thickets. The male sings occasionally, in fine weather, even in winter; but in the latter half of spring especially, may be heard chanting its short, clear, pleasantly modulated, but not remarkably mellow song. At all seasons, it has a peculiar shake of the wings, which, during the breeding period, increases to a kind of flutter. It feeds on small seeds of various kinds, as well as insects, pupæ, and larvæ, using a great quantity of minute fragments of quartz and other hard minerals. The nest, which is formed from the middle of March to the beginning of May, is bulky, lined with wool and

hair, and generally placed in a hedge or bush. The eggs, five or six in number, are greenish-blue, oval, rather pointed, nine or ten twelfths long, seven-twelfths in breadth. There are generally two broods in the season. The eyelids and base of the bill are frequently affected with tubercular excrescences, apparently of a carcinomatous nature.

Hedge Sparrow. Hedge Warbler. Dunnock. Dick-Dunnock. Shuffle-wing.

Motacilla modularis, Linn. Syst. i. 329.—Accentor modularis, Temm. Man. d'Ornith. i. 249.—Accentor modularis, Hedge-Chanter, MacGillivray, Brit. Birds, ii. 251.

GENUS XXXIX. ERITHACUS. REDBREAST.

Bill rather short, straight, slender, broader than high at the base, compressed toward the end; upper mandible with its dorsal line slightly convexo-declinate, the ridge rather obtuse, the notches small but distinct, the tip narrow and abruptly rounded; lower mandible with the dorsal line ascending and slightly convex, the tip acute. Mouth narrow; tongue oblong, sagittate and papillate at the base, a little concave above, the tip rounded and lacerated; œsophagus of moderate width, nearly uniform; proventriculus oblong; stomach of moderate size, roundish-elliptical, with strong lateral muscles, large tendons, and dense longitudinally rugous epithelium; intestine of moderate length and width; cœca very small, cylindrical. Eyes of moderate size. Nostrils longish, linear, straight, in the fore part of the rather large nasal sinus, which is feathered in the greater part of its extent. Aperture of ear, large, roundish. Head of moderate size, oblong; neck short; body ovate. Legs longish, slender; tarsus much compressed, anteriorly with a long undivided piece and three inferior scutella; toes of moderate size, much compressed; the first stout, the lateral about equal; claws of ordinary length, arcuate, extremely compressed, laterally grooved, acute. Plumage full, soft, blended; basirostral bristles pretty long; wing short, broad, concave, much rounded, of eighteen quills, the first half the length of the second, the fourth longest; tail of moderate length, slightly decurved, nearly even.

The form of the bill is very similar to that of the Thrushes, to which the Robins are closely allied in habits. They fre-

quent woods, thickets, and gardens, but feed chiefly on the ground, where they hop with their wings depressed, and the tail horizontal.

70. Erithacus Rubecula. Robin Redbreast.

Upper parts olive-green, the quills and tail-feathers greyish-brown, the outer secondary coverts with a small brownish-yellow spot at the tip; anterior part of forehead, loral space, sides of the head, fore neck, and anterior part of the breast, yellowish-red; a line of ash-grey over the eye and down the side of the neck. The female differs only in having the red on the neck somewhat paler, and the upper parts tinged with grey. The young have the upper parts dusky olive with a spot of dull orange on each feather, the secondary coverts largely tipped with dusky orange, the lower parts brownish-yellow, the tips and edges of the feathers dark brown.

Male, $5\frac{8}{12}$, 9, $2\frac{10}{12}$, $\frac{5}{12}$, 1, $\frac{15}{24}$, $\frac{3}{12}$. Female, $5\frac{1}{2}$, 9.

The lively, pert, pugnacious, and cheerful Robin occurs in all the wooded and cultivated parts of the country, frequenting the neighbourhood of houses during winter. It has a short, rapid, direct flight; on the ground hops, stands, and starts forward, in the manner of the Thrush; feeds on worms and insects, berries, and farinaceous substances. Its song is lively, clear, and mellow. The nest, which is placed under a hedge, bush, or tuft of herbage, on the ground, or on a mossy bank, is bulky, composed of various materials, lined with hair and wool. The eggs, five or six, are of a regular oval form, nine and a half twelfths in length, seven and a fourth twelfths in breadth, reddish-white, faintly freckled with light purplish-red. Individuals sometimes enter houses in winter, and on being caught, soon become familiar. Its blood has a singularly nauseous and bitter taste. The Robin is a privileged bird, spared even by Cockney sportsmen, every one looking on him as a friendly and pleasant little fellow, whose company is never tiresome. I have heard of a closet naturalist who, slighting the labours of a brother of the field, alleged that he could pen a volume on the Robin; but surely, if confined to the subject, written in the manner of the Classification of Birds in Lardner's Cyclopædia, and without the aid of fable, it would prove a duller book than Robinson Crusoe.

Robin. Redbreast. Robinet. Ruddock.

Motacilla Rubecula, Linn. Syst. Nat. i. 337.—Sylvia Rubecula, Temm. Man. d'Ornith. i. 215.—Erithacus Rubecula, Robin Redbreast, MacGillivray, Brit. Birds, ii. 263.

GENUS XL. FRUTICICOLA. BUSHCHAT.

Bill short, straight, slender, depressed at the base, compressed toward the end; upper mandible with its dorsal line declinate, and nearly straight, the ridge narrow at the base, and continuing rather sharp to the end, the notches small, the tip narrow, deflected, rather acute; lower mandible with the angle moderate, the dorsal line nearly straight, the edges inflected, the tip narrowed to a blunt point; the gape-line straight. Mouth rather wide; tongue short, sagittate, emarginate and papillate at the base, rather narrow, concave above, bristly on the edges, with the tip slit; œsophagus of moderate width, nearly uniform; proventriculus oblong; stomach of moderate size, roundish-elliptical, compressed, its lateral muscles rather thick, the epithelium dense and longitudinally rugous; intestine of moderate length and width; cœca very small, oblong. Eyes of moderate size. Nostrils small, elliptical, direct, pervious, in the fore part of the large nasal membrane, which is anteriorly bare. External aperture of ear large and roundish. Head rather large, ovate, and convex above; neck short; body compact. Legs of moderate length, slender; tarsus much compressed, covered anteriorly with a long plate and four anterior scutella; toes rather short, slender, the second and fourth about equal; the first longer, and stoutest, the third and fourth united as far as the second joint of the latter; claws long, moderately arched, extremely compressed, laterally grooved, extremely acute. Plumage soft and blended; bristles rather large, wings short, broad, convex, with eighteen quills; the first extremely small, the fourth longest, but the third and fifth scarcely less; tail short, nearly even.

The species of this genus frequent bushy places, perching on the twigs or on stones, whence they sally forth in pursuit of insects, and often hover in search of them. They nestle on the ground among shrubs. The two which occur in Britain are found chiefly on heaths, commons, and wastes overgrown with juniper, furze, brambles, sloes, and other shrubs.

71. Fruticicola Rubetra. Whin Bushchat.

Male with the upper parts light yellowish-red, streaked

with distinct oblong blackish-brown spots; a yellowish-white band over the eye; a patch on the wing, a longitudinal band on each side of the neck, and the basal part of the tail, white; the lower parts light red anteriorly, paler behind. Female with the dark spots larger, the white markings less conspicuous, that on the wing occupying only the tips of some of the coverts, the lower parts of a duller and paler tint. Young with the upper parts dusky, each feather marked with a central, oblong, yellowish-grey spot; the lower parts light greyish-brown, the feathers on the fore neck margined with dusky. By the abrasion of the feathers, as the summer advances, the upper parts in the adults become darker, the wings of a more uniform but lighter brown, the fore neck and breast of a pale red, and the white markings of a purer tint.

Male, $5\frac{1}{4}$, $9\frac{1}{4}$, $2\frac{11}{12}$, $\frac{5}{12}$, $\frac{10}{12}$, $\frac{7}{12}$, $\frac{3}{12}$. Female, $5\frac{1}{4}$, $9\frac{2}{12}$.

The Whinchat leaves us in September and returns in April. It is generally dispersed over the country, occurring here and there in pastures, chiefly in hilly and upland parts, but also in low tracts overgrown with small shrubs. It flits on wing by short starts from place to place, is most frequently seen on the top twig of a bush, whence it issues in pursuit of insects, when stationed is continually jerking its body and tail, at every movement uttering a short sharp note resembling the syllable chat, or tick, whence its common name of Whinchat. It has a short, modulated, cheerful song, which it performs either when perched or when fluttering in the air over a bush. The nest is concealed among shrubs and herbage, and is composed of grasses, fibrous roots, and moss, with a lining of finer fibres and hair. The eggs, four or five, are of a uniform light greyish-blue, sometimes marked with brownish-red dots, but generally unspotted, eight and a half twelfths long, six and a half twelfths in breadth. It breeds twice in the season.

Whinchat. Furzechat.

Motacilla Rubetra, Linn. Syst. Nat. i. 332.—Saxicola Rubetra, Temm. Man. d'Ornith. i. 244.—Fruticicola Rubetra, Whin Bushchat, MacGillivray, Brit. Birds, ii. 273.

72. Fruticicola Rubicola. Black-headed Bushchat.

Male with the head and throat black, the breast brownish-red, the sides of the neck, a spot on the wings, and the basal part of the upper tail-coverts, white, the upper parts brownish-black, the feathers edged with brownish-red. Female with the head and upper parts streaked with brownish-black and

brownish-red, the throat yellowish-grey, the breast dull brownish-red, a white spot on the wings, and the upper tail-coverts yellowish-red. Young with the upper parts dusky, streaked with pale yellowish-red, the lower dull yellowish-brown, the fore neck mottled with dusky, and some of the inner secondary coverts white. Considerable diversity is produced by the abrasion of the margins of the feathers, in summer.

Male, $5\frac{1}{2}$, 9, $2\frac{10}{12}$, $\frac{5}{12}$, $\frac{10}{12}$, $\frac{7}{12}$, $\frac{3}{12}$. Female, $5\frac{1}{4}$, 9.

Although it appears that many individuals of the species leave us in autumn, it is to be found both in England and Scotland in winter. It is generally dispersed in summer, although nowhere abundant, resorting to heaths and hill pastures overgrown with furze, juniper, and other low shrubs. Its favourite station is the top twig of a bush, whence it sallies forth in pursuit of insects. It flits about by short starts, with a direct flight, or alighting jerks its body and tail, and utters at intervals a note resembling the syllables snack, chack, or chit. The nest, which is placed on the ground among shrubs, is bulky, composed of grass and moss, and lined with finer straws, fibrous roots, hair and wool. The eggs, five or six, are light greenish-blue, marked towards the larger end with pale brown dots, their length eight-twelfths and a half, their breadth nearly seven-twelfths. Although commonly named Stonechat, this bird is not especially addicted to frequenting stony places; but it may sometimes be found in such as are interspersed with shrubs and briars.

Stonechat. Stonesmich. Stonechatter. Blacky-top.

Motacilla Rubicola, Linn. Syst. Nat. i. 332.—Saxicola Rubicola, Temm. Man. d'Ornith. i. 246.—Fruticicola, Black-headed Bushchat, MacGillivray, Brit. Birds, ii. 279.

GENUS XLI. SAXICOLA. STONECHAT.

Bill of moderate length, straight, slender, depressed at the base, compressed toward the end; upper mandible with its dorsal line slightly declinate and nearly straight, the ridge narrow at the base, and continuing rather sharp to the end, the notches obsolete, the tip declinate, narrow, and rather blunt; lower mandible with the angle moderate, the dorsal line nearly straight, the edges inflected, the tip narrowed to a blunt point; the gape-line straight. Mouth rather wide; tongue of moderate length, sagittate, emarginate, and papillate at the base, narrow, concave above, bristly on the edges,

with the tip slit; œsophagus of moderate width, nearly uniform; proventriculus oblong; stomach of moderate size, roundish-elliptical, compressed, its lateral muscles rather thick, the epithelium dense and longitudinally rugous; intestine of moderate length and width; cœca very small, oblong. Eyes of moderate size. Nostrils small, oblong, pervious, in the fore part of the large nasal membrane, which is anteriorly bare. External aperture of ear large and roundish. Head rather large, ovate, and somewhat depressed; neck short; body rather compact. Legs rather long and slender; tarsus much compressed; covered anteriorly with a long plate and four inferior scutella: toes rather short, slender, the second and fourth about equal, the first longer and stoutest, the third and fourth united as far as the second joint of the latter; claws long, moderately arched, extremely compressed, laterally grooved, acute. Plumage soft and blended; bristles short; wings long, broad, straight, with eighteen quills, the first extremely small, the third longest, but little exceeding the second and fourth; tail of moderate length, nearly even.

This genus differs from Fruticicola in having the bill larger, with the notch obsolete, the wings, tail, and tarsi longer. The Saxicolæ frequent rocky or stony places, as well as open pastures, and either sally forth in pursuit of insects, or seek their food on the ground. They nestle among stones, in crevices of rocks, or in holes in the ground.

73. Saxicola Œnanthe. White-rumped Stonechat.

Male with the feet and claws black; the upper parts light ash-grey; a black band from the bill over the cheek and ear-coverts; forehead and a band over the eyes, white, as are the rump and upper tail-coverts; fore neck and part of the breast pale yellowish-brown, throat and other lower parts white; quills brownish-black; tail-feathers white at the base, brownish-black toward the end. Female with the upper parts brownish-grey or light reddish-brown tinged with grey, the forehead brown, a brown band under the eye; the fore neck and part of the breast light reddish-brown. Young with the upper parts greyish-brown, the central part of each feather paler, the lower parts light greyish-yellow, the feathers of the neck and breast tipped with brown, the dark band on the side of the head wanting.

Male, $6\frac{3}{4}$, $12\frac{1}{2}$, $3\frac{11}{12}$, $\frac{7}{12}$, $1\frac{1}{24}$, $\frac{15}{24}$, $\frac{3}{12}$. Female, $6\frac{1}{2}$, $11\frac{1}{4}$.

The Stonechat is the earliest of our summer visitants, arriving about the middle of March. It is generally dispersed, betaking itself to sandy downs, pastures, and stony slopes, both on the coast and in the interior. Rude stone or turf walls are favourite places of resort; and it reposes at night in holes among stones, or in rabbit burrows. It is a very lively and active bird, hopping along with great celerity, flying low by short starts, frequently emitting its cry of chack, chack, and when standing, jerking its body like the bushchats. Its food consists of insects, worms, and small testaceous mollusca. It has a short, lively and pleasantly modulated song, which it performs sometimes when perched on a rock, wall, or turf, more frequently while hovering in the air, or during its short flights. The nest, which is composed of grass, roots, and moss, with a lining of hair, wool, and feathers, is placed in a hole under a stone, or in a wall, or in the ground. The eggs, five or six, or from four to seven, are elongated, oval, ten-twelfths in length, seven-twelfths in breadth, pale greenish-blue. Two broods are reared. On the southern downs, where they collect in great numbers in autumn, these birds are caught with nooses placed between two turfs, they being esteemed delicious food.

White-rump. Fallow-smich. Wheatear. White-tail. Stone-chat. Stane-chack.

Motacilla Œnanthe, Linn. Syst. Nat. i. 332.—Saxicola Œnanthe, Temm. Man. d'Ornith, i. 237.—Saxicola Œnanthe, White-rumped Stonechat, MacGillivray, Brit. Birds, ii. 289.

GENUS XLII. RUTICILLA. REDSTART.

Bill rather short, slender, a little depressed at the base, compressed toward the end; upper mandible with its dorsal line slightly declinate and nearly straight, the ridge very narrow at the base, a slight sinus on the edges, close to the tip, which is slightly declinate, very narrow, and rather acute; lower mandible with the angle of moderate length, the edges inflected, the tip narrowed to a bluntish point; the gape-line straight. Mouth of moderate width; tongue of ordinary length, sagittate, papillate at the base, narrow, bristly on the edges, with the tip slit; œsophagus of moderate width and nearly uniform; proventriculus oblong; stomach roundish, elliptical, compressed, its lateral muscles rather thick, the epithelium dense and longitudinally rugous; intestine of mo-

derate length and width; cœca very small, oblong. Eyes of moderate size. Nostrils very small, elliptical, pervious, in the fore part of the large nasal membrane, which is anteriorly bare. Head ovate, rather flattened anteriorly; neck short; body compact, rather slender. Legs of moderate length, slender; tarsus very much compressed, anteriorly with a long plate and three inferior scutella; toes rather long, very slender, much compressed, the two lateral nearly equal, the first stouter; claws rather long, moderately arched, very slender, extremely compressed, laterally grooved, acute. Plumage very soft and blended; wings rather long, broad, almost straight, with eighteen quills, the first very small, the second considerably shorter than the third, which is longest. but scarcely exceeds the fourth; tail rather long, straight, nearly even.

The Redstarts, which have the bill shorter than that of the Stonechats, and more slender than that of the Bushchats, are intermediate in form between the Motacillæ, Saxicolæ, and Sylviæ. Their food is composed of insects, which they generally catch on wing, of larvæ, pupæ, and berries. Only one species is of common occurrence in Britain, but two others have been met with there.

74. Ruticilla Cyanecula. Blue-throated Redstart.

Male with the upper parts wood-brown, the fore neck and breast with patches of ultramarine blue and light red; tail light red, toward the end brownish-black; breast and abdomen whitish, sides and lower wing and tail coverts pale reddish-yellow. Female with the upper parts as in the male, the throat white, with a curved band of blue, having black spots intermixed. Young brown, spotted with whitish, and having a large white space on the throat. In place of the light red on the throat, the adults sometimes have white.

Male, $5\frac{10}{12}$, .., $3\frac{1}{4}$, $5\frac{1}{4}$, $1\frac{1}{12}$, $\frac{8}{12}$, $\frac{3}{12}$.

An individual was shot near Newcastle, in May 1826, and another in Dorsetshire. The species is said to be not uncommon in various parts of the Continent, extending from Spain and Italy to Siberia, Russia, Finland, and the north of Sweden.

Blue-throated Warbler.

Motacilla suecica, Linn. Syst. Nat. i. 336.—Sylvia suecica, Temm. Man. d'Ornith. i. 216.—Ruticilla Cyanecula, Blue-throated Redstart, MacGillivray, Brit. Birds, ii. 300.

75. Ruticilla Phœnicurus. White-fronted Redstart.

Male with the middle of the forehead white, its anterior part, the cheeks, and throat, black; the hind-head, neck, and back deep ash-grey; the breast, rump, and tail reddish-orange. Female with the upper parts reddish-grey, the throat reddish-white, the breast, rump, and tail reddish-orange. Young with the upper parts brownish-grey, the forehead without white, the throat lunulated with white, the red of the fore neck and breast similarly variegated.

Male, $5\frac{3}{4}$, $9\frac{1}{4}$, $3\frac{2}{12}$, $\frac{5}{12}$, $\frac{11}{12}$, $\frac{6}{12}$, $\frac{3}{12}$. Female, $5\frac{7}{12}$, $9\frac{1}{12}$.

This species bears a considerable resemblance to the White-rumped Stonechat, in form, colour, and habits. It arrives from the middle to the end of April, and departs in October. Generally assuming a station on a stone or twig, and jerking out its tail at intervals, it sallies forth in pursuit of insects, in the manner of several other Saxicolinæ and of the Flycatchers. It is very partial to walls, and frequently places its nest in a hole, or chink of one, but sometimes in the hole of a tree. It is composed of fibrous roots and moss, and is plentifully lined with hair. The eggs, six or seven, are of a light greenish-blue colour, scarcely distinguishable from those of the Hedge Chanter, although somewhat smaller, their length being nine-twelfths, their breadth six-twelfths. The Redstart is extensively distributed in Britain and Ireland.

Redstart. Redtail. Firetail.

Motacilla Phœnicurus, Linn. Syst. Nat. i. 335.—Sylvia Phœnicurus, Temm. Man. d'Ornith. i. 220.—Ruticilla Phœnicurus, White-fronted Redstart, MacGillivray, Brit. Birds, ii. 305.

76. Ruticilla Tithys. Black-breasted Redstart.

Male with the upper parts greyish-blue; the throat and breast black, the rump and tail coverts brownish-red; the tail light red. Female greyish-brown above, light grey beneath, the rump reddish-brown, the tail brownish-red.

Male, 6, .., $3\frac{4}{12}$, $\frac{5}{12}$, 1, $\frac{6}{12}$, $\frac{3}{12}$. Female, $5\frac{3}{4}$.

Individuals have been killed in various parts of England: one at Kilburn, in October 1829; one near Bristol, in the summer of 1830; another in the same vicinity, in December 1835; one at Brighton; and one at Teignmouth in Devonshire.

Black Redstart. Black Redtail.

Sylvia Tithys, Lath. Ind. Ornith. ii. 512.—Sylvia Tithys, Temm. Man. d'Ornith. i. 218.—Ruticilla Tithys, Black-breasted Redstart, MacGillivray, Brit. Birds, ii. 311.

FAMILY XVIII. SYLVIINÆ. SYLVIINE BIRDS OR WARBLERS.

Body slender; neck short; head rather large, ovate. Bill short, straight, slender, tapering, rather broader than high at the base, compressed toward the end, its outlines very slightly convex, the notch of the upper mandible obsolete or faint. Mouth of moderate width; both mandibles moderately concave; tongue of moderate length, emarginate and papillate at the base, narrow, grooved above, horny, thin-edged, its point slit and lacerated; œsophagus of moderate width, and without dilatation; stomach elliptical, with the lateral muscles strong, the epithelium thin, tough, and longitudinally rugous; intestine short, and rather wide; cœca very small. Trachea with four pairs of inferior laryngeal muscles. Eyes of moderate size. Nostrils small, oblong, operculate. Aperture of ear large, elliptical, or roundish. Feet of moderate length; tarsus slender, much compressed, distinctly scutellate before, thin-edged behind, with two longitudinal plates; toes four, moderate, slender, the first comparatively stout, the lateral about equal; claws arched, extremely compressed, acute. Plumage soft and blended; wings of moderate length, more or less rounded, of eighteen quills; tail moderate, of twelve feathers, even, rounded, or emarginate.

The Sylviinæ are birds of small size, none of them much exceeding the Nightingale. They are distinguished from the Saxicolinæ by being less robust, by having the bill narrower at the base, and the tarsi more slender. They are active, lively, and, in general, remarkable for the variety, softness, and modulation of their notes, several of them being among the most celebrated songsters. They feed on insects, larvæ, soft fruits, and sometimes seeds. Most of them, owing to their being essentially in-

sectivorous, are migratory. Species are found in all parts of the globe. In Britain sixteen have been met with.

GENUS XLIII. PHILOMELA. NIGHTINGALE.

Bill of moderate length, straight, rather broader than high at the base, compressed toward the end; upper mandible with the dorsal line slightly declinate, the ridge narrow, the notches faint, the tip acute; lower mandible with the dorsal line slightly convex, the tip rather acute. Mouth of moderate width; tongue slender, sagittate and papillate at the base, tapering to a slit and lacerated point; œsophagus of moderate width, without dilatation; proventriculus oblong; stomach a gizzard of moderate power, roundish, compressed, with rather thin muscles, large tendons, thin, dense, longitudinally rugous epithelium; intestine short, of moderate width; cœca very small, cylindrical. Eyes rather small. Nostrils rather large, oblong, operculate. External aperture of ear large, roundish. Head ovate-oblong; neck short; body rather slender. Tarsi rather long, slender, compressed, with eight anterior scutella, of which the upper are indistinct; toes slender, compressed, the first stout, the lateral equal; claws of moderate length, arched, extremely compressed, laterally grooved, acute. Plumage soft and blended; bristles very small; wings of moderate length, broad, rounded; the first quill very short, third longest, second and fifth equal; tail rather long, straight, even, or slightly rounded.

The Nightingales form a genus differing from the Sylviæ chiefly in being of a more slender form, and in having the bill, tarsi, and tail, more elongated. They are very intimately allied to the Turdinæ. One species occurs in England.

77. Philomela Luscinia. Brake Nightingale.

Upper mandible reddish-brown, lower pale yellowish-brown at the tip; feet and claws pale greyish-brown; plumage above reddish-brown, redder on the head and rump, the tail of a brighter tint; throat, lower part of breast, and abdomen, greyish-white; lower part of neck and sides pale greyish-brown; lower tail-coverts dull yellowish-white. Young similar, but

with the feathers of the upper parts tipped with reddish-yellow, those of the lower margined with dusky.

Male, $6\frac{9}{12}$, $10\frac{1}{2}$, $3\frac{4}{12}$, $\frac{5}{12}$, 1, $\frac{7}{12}$, $\frac{3}{12}$. Female, $6\frac{1}{2}$, 10.

The Nightingale arrives in the south of England about the middle of April, dispersing over the southern and eastern counties, and proceeding as far north as the vicinity of York and Carlisle. Although supposed to have been heard in Scotland, it has never been obtained there. Its favourite haunts are copses and hedge-rows, and its food insects of various sorts. Being so highly esteemed on account of the pre-eminence of its song, it is caught in considerable numbers. The nest is bulky, formed of dry leaves, and lined with grass, fibrous roots, and hair. The eggs, four or five, are of a uniform pale olive-brown, often tinged with greyish-blue, nine and a half twelfths of an inch in length, seven-twelfths in breadth.

Motacilla Luscinia, Linn. Syst. Nat. i. 328.—Sylvia Luscinia, Temm. Mann. d'Ornith. i. 195.—Philomela Luscinia, Brake Nightingale, MacGillivray, Brit. Birds, ii. 321.

GENUS XLIV. SYLVIA. WARBLER.

Bill rather short, slender, a little broader than high at the base, slightly compressed toward the end; upper mandible with the dorsal line straight and declinate, the ridge narrow, the notches rather distinct, the tip declinate, very narrow, and blunt; lower mandible with the dorsal line very slightly convex, the tip broader than that of the upper; gape-line straight. Mouth of moderate width; tongue slender, sagittate, finely papillate at the base, tapering to a slit and lacerate point; œsophagus of moderate width, without dilatation; proventriculus oblong; stomach a gizzard of moderate power, roundish, compressed, its muscles rather thin, the tendons large, the epithelium thin, dense, longitudinally rugous; intestine short, of moderate width; cœca very small, cylindrical. Nostrils oblong, narrow, operculate. Eyes rather small. Aperture of ear large, roundish. Head ovate; neck short; body ovate, rather slender. Feet slender; tarsus rather short, much compressed, with eight distinct anterior scutella; toes of moderate length, much compressed, the first rather large, the lateral equal, the third and fourth united at the base; claws rather stout, well arched, much compressed, laterally grooved, acute. Plumage soft and blended; wings of mo-

derate length, with eighteen quills; the first minute and pointed, the third longest, the second and fourth very little shorter; tail of moderate length, straight, slightly emarginate.

The Warblers are small, delicate, active, and lively birds, which frequent woods, thickets, hedges, and gardens, feed on insects and small fruits, and have a pleasantly modulated song. Four species, all migratory, occur in Britain.

One nest in garden house 2 young 3 Aug: 1880

78. Sylvia hortensis. Garden Warbler.

Upper parts light greyish-brown, tinged with olive; wings and tail dusky, margins of the quills and coverts of the same colour as the back, the lateral tail-feathers like the rest; lower parts greyish-white, the breast and sides tinged with brown. Young similar, but with the upper parts of a richer yellowish-brown tint, the lower more tinged with yellow, the axillars and lower wing-coverts pure yellow.

Male, 6, $9\frac{1}{12}$, $3\frac{1}{4}$, $\frac{5}{12}$, $\frac{9}{12}$, $\frac{13}{24}$, $\frac{7}{24}$. Female, $5\frac{10}{12}$, 9.

Arrives in the end of April and beginning of May, and is generally dispersed in England, as well as the south of Scotland. It occurs chiefly in thickets, plantations, woods, and gardens, and from its plain colours and unobtrusive habits, attracts little attention. Its song is similar to that of the Blackcap. It feeds on insects and worms, as well as pulpy fruits, is extremely active and restless, rears two broods, and departs by the middle of September. The nest is frequently placed on the ground, and is loosely constructed. The eggs, from four to six, are nine-twelfths long, six and a half twelfths in breadth, dull white, dotted with light brown and grey.

Fauvette. Garden Fauvet. Greater Pettychaps. Nettle-creeper.

Sylvia hortensis, Lath. Ind. Ornith. ii. 507.—Sylvia hortensis, Temm. Man. d'Ornith. i. 206.—Sylvia hortensis, Garden Warbler or Pettychaps, MacGillivray, Brit. Birds, ii. 345.

79. Sylvia Atricapilla. Blackcap Warbler.

Male with the upper parts light yellowish-grey, the head black; the lower parts ash-grey, paler behind, and tinged with yellow; wings and tail greyish-brown. Female similar, but with the head reddish-brown. Young similar to the adult, but with the head greyish-brown.

Male, $6\frac{1}{2}$, $9\frac{1}{4}$, $3\frac{1}{12}$, $\frac{5}{12}$, $\frac{10}{12}$, $\frac{6}{12}$, $\frac{3}{12}$. Female, $6\frac{1}{12}$, $9\frac{1}{4}$.

Arrives in April and departs in September, is generally distributed in England, and occurs here and there in the south

of Scotland; but being shy and of hideling habits, is not easily discovered. Its song is delightful, in the opinion of some little inferior to that of the nightingale. The nest, loosely constructed, and lined with fibrous roots and hair, is placed in the fork of a shrub, or on the ground. The eggs, four or five, are eight and a half twelfths long, seven-twelfths in breadth, greyish-white, faintly mottled and freckled with purplish-grey, with some streaks of blackish-brown.

Mock Nightingale.

Motacilla Atricapilla, Linn. Syst. Nat. i. 332.—Sylvia Atricapilla, Temm. Man. d'Ornith. i. 201.—Sylvia Atricapilla, Black-capped Warbler, or Black-cap, MacGillivray, Brit. Birds, ii. 339.

80. Sylvia cinerea. White-throated Warbler.

Male with the tarsi brownish-red; the upper parts light greyish-brown, the head brownish-grey, the wings and tail dusky, the secondaries and their coverts broadly edged with light brownish-red, the lateral tail-feathers with the outer web and a portion of the inner greyish-white; lower parts greyish-white, the lower part of the fore neck tinged with red, the sides and tibial feathers with brown. Female similar; the upper parts yellowish-brown, the head less tinged with grey, the lateral tail-feathers with brownish-white. Young with the upper parts uniform reddish-brown, the quills more broadly margined with light red, the lateral tail-feathers reddish-white in their whole extent, the lower parts greyish-white tinged with brown.

Male, $5\frac{10}{12}$, $8\frac{3}{4}$, $2\frac{10}{12}$, $\frac{9}{24}$, $\frac{13}{24}$, $\frac{3}{12}$. Female, $5\frac{10}{12}$, $8\frac{1}{2}$.

Arrives in the end of April and beginning of May, and departs in September. It frequents hedges, thickets, and gardens, is extremely restless and petulant, flits about with a rapid flight, often hovers on wing, emitting its song, which is short, lively, but not remarkably pleasant. It feeds on insects, larvæ, and soft fruits. The nest, usually placed among brambles, briars, or rank herbaceous plants, is elegantly, but loosely, constructed of withered stems of Galium Aparine or Goose-grass, lined with finer filaments and hair. The eggs, generally five, are greenish-white, spotted and freckled with greyish-green and purplish-grey, their length nine-twelfths, their breadth six-twelfths and three-fourths.

White-throat. Greater White-throat. Whey-beard. Wheetie-why. Peggy White-throat. Nettle-creeper. Churr. Muff.

Muffet. Muftie. Charlie-muftis. Beardie. Whattie. Whishey. Blethering Tam.

Sylvia cinerea, Lath. Ind. Orn. i. 514.—Sylvia cinerea, Temm. Man. d'Ornith. i. 207.—Sylvia cinerea, White-throated Warbler, or White-throat, MacGillivray, Brit. Birds, ii. 350.

31. Sylvia garrula. White-breasted Warbler.

Male with the feet bluish-grey; the upper parts brownish-grey, the head dark ash-grey, the wings and tail dusky, the secondaries edged with light grey, the lateral tail-feathers nearly white; lower parts white, the breast tinged with red, the sides with grey. Young like the female.

Male, $5\frac{1}{4}$, 8, $2\frac{8}{12}$, $\frac{9}{24}$, $\frac{10}{12}$, $\frac{6}{12}$, $\frac{2}{12}$.

Although *Sylvia hortensis, cinerea,* and *garrula,* are often confounded by students, they may very readily be distinguished by attending to the specific characters given above. The present species, which arrives and departs about the same periods as the rest, is very uncommon in the south of Scotland, and less common than *S. cinerea* in any part of England. It feeds on insects, larvæ, and small fruits; frequents gardens, hedges, and thickets; is extremely active and shy; and has a short, not unpleasant warble. The nest, which is placed among briars, or among the herbage, is composed of stems and leaves of slender grasses, rather loosely interwoven, with a lining of fine straws, fibrous roots, and hair. The eggs, usually five, are white or greyish-white, spotted and patched with light grey and brown; their length eight-twelfths, their breadth six-twelfths.

Lesser White-throat. Babillard. Babbling Warbler.

Motacilla garrula, Linn. Fauna Suec. 254.—Sylvia Curruca, Temm. Man. d'Ornith. i. 209.—Sylvia garrula, White-breasted Warbler, MacGillivray, Brit. Birds, ii. 367.

GENUS XLV. MELIZOPHILUS. FURZELING.

The only species of which this genus is composed differs little from the Sylviæ in form and habits, but has the tail remarkably elongated.

Bill short, slender, broader than high at the base, compressed toward the end; upper mandible with its dorsal line convex toward the tip, which is acute, the notches very small; lower mandible with the edges a little inflected, the tip acute.

Nostrils elliptical, pervious, in the fore part of the nasal membrane, which is feathered behind. Eyes of moderate size. External aperture of ear large and roundish. Tarsi slender, rather long, with the scutella distinct; toes of moderate length, slender; claws moderate, arched, much compressed, very acute. Plumage blended; wings rather short, rounded; the first quill very small, the fourth and fifth longest; tail long, straight, graduated.

82. MELIZOPHILUS PROVINCIALIS. PROVENCE FURZELING.

Upper parts blackish-grey; fore part of neck and sides of the body reddish-brown, abdomen white; tail long, graduated; bill brownish-black, with the base of the lower mandible orange; tarsi and toes light reddish-brown, claws dusky. Female similar, but with the tints lighter, and the throat streaked with white.

Male, 5, . ., $2\frac{4}{12}$, $\frac{9}{24}$, $\frac{9}{12}$, $\frac{5}{12}$, $\frac{3}{12}$.

This bird, first discovered as British by Latham, occurs on commons in several of the southern counties of England. It is a permanent resident, inhabiting furze thickets, among which it glides with the greatest activity, flying with short jerks in the manner of the Bush-chats and White-throat, and feeding on small insects, which it frequently seizes on wing, returning to its perch. Its nest is loosely constructed, like that of the White-throat. The eggs also resemble those of that bird, being greenish-white, freckled all over with olivaceous brown and cinereous.

Dartford Warbler. Furze Wren.

Motacilla provincialis, Gmel. Syst. Nat. i. 958.—Sylvia provincialis, Temm. Man. d'Ornith. i. 211.—Melizophilus provincialis, Selby, Illust. i. 219.—Melizophilus provincialis, Provence Furzeling, MacGillivray, Brit. Birds, ii. 383.

GENUS XLVI. PHYLLOPNEUSTE. WOOD-WREN.

Bill rather short, very slender, straight, rather depressed at the base, compressed toward the end; upper mandible with the dorsal line straight, slightly declinate toward the end, the ridge very narrow at the base, the notches distinct, the tip declinate, very narrow, but truncate; lower mandible with the dorsal line very slightly convex, the edges erect, the tip acute. Mouth of moderate width; tongue slender, sagit-

tate, finely papillate at the base, flat above, tapering to a slit point; œsophagus of moderate width; proventriculus small; stomach roundish, compressed, its muscular coat rather thin, the tendons large, the epithelium dense, thin, with broad rugæ; intestine short; cœca very small, cylindrical. Nostrils oblong, narrow, operculate. Eyes rather small. Aperture of ear large, roundish. Head oblong; neck short; body slender. Tarsus rather long, much compressed, with seven anterior scutella, of which only the lower three are distinct; toes moderate, very slender, much compressed, the first rather large, the second and fourth about equal, the third and fourth united at the base; claws rather long, arched, extremely compressed, laterally grooved, acute. Plumage soft and blended; bristles small; wings of moderate length, with nineteen quills; the first very small, the next four longest; tail rather long, straight, slightly emarginate, the feathers weak, and rather slender.

The Wood-wrens are very small and delicate birds, of extremely active habits, migratory, frequenting woods and bushy places, especially in the lower grounds, and feeding on insects, larvæ, pupæ, and worms. They have a short, lively, and melodious song; a rapid, gliding, and undulated flight. Three species occur in Britain, very similar to each other, and best distinguished by the form of the wing.

83. Phyllopneuste sylvicola. Yellow Wood-wren.

Length about five inches; wings long, the second quill intermediate between the third and fourth, which, with the fifth, have their outer webs cut out toward the end; upper parts light yellowish-green; throat and sides of the breast yellow; breast, abdomen, and lower tail-coverts white. Young similar, being merely of a lighter tint.

Male, $5\frac{2}{12}$, $8\frac{3}{4}$, $3\frac{2}{12}$, $\frac{9}{24}$, $\frac{17}{24}$, $\frac{5}{12}$, $\frac{5}{24}$. Female, $5\frac{2}{12}$, $8\frac{9}{12}$.

Arrives from the middle of April to that of May, and departs about the end of September. It inhabits woods, thickets, and gardens, in most parts of England, and the southern and middle divisions of Scotland. Its song, which it performs while perched on a twig, is soft, modulated, and short, the first notes prolonged, the last rapid, and forming a kind of shrill shaking sound. The nest is well constructed, and lined with fine grasses and hair. The eggs, five or six, white, with red-

dish-purple spots. It is not nearly so common as the next species.

Wood Wren. Yellow Wren. Willie Muftis.

Sylvia sylvicola, Lath. Ind. Ornith. Suppl. ii. 53.—Sylvia sibillatrix, Temm. Man. d'Ornith. i. 223.—Phyllopneuste sylvicola, Yellow Wood-wren, MacGillivray, Brit. Birds, ii. 364.

84. Phyllopneuste Trochilus. Willow Wood-wren.

Length about five inches; wings of moderate length, the second quill shorter than the fifth, which, with the third and fourth, has its outer web cut out towards the end; upper parts light greenish-brown, the feathers edged with yellowish-green; the cheeks and sides of the neck pale greyish-brown tinged with yellow; the fore neck and sides greyish-white, streaked with yellow; breast and abdomen white; lower tail-coverts yellowish-white. Young similar, with the upper parts lighter, the yellow beneath brighter.

Male, 5, $7\frac{3}{4}$, $2\frac{8}{12}$, $\frac{9}{24}$, $9\frac{1}{4}$, $\frac{5}{12}$, $\frac{2}{12}$. Female, $5\frac{2}{12}$, 8.

Arrives from the beginning to near the end of April, and departs about the end of September. It inhabits woods, thickets, and gardens, and is generally dispersed. Its song is soft, mellow, and extremely pleasing, the first notes prolonged, the rest gradually falling and becoming shorter. The nest is lined with feathers, and arched over. The eggs, from four to seven, seven and a half twelfths long, white, with light red or purplish-red spots.

Willow Warbler. Willow Wren. Ground Wren. Hay Bird. Huckmuck. Willie Muftie.

Motacilla Trochilus, Linn. Syst. Nat. i. 338.—Sylvia Trochilus, Temm. Man. d'Ornith. i. 224.—Phyllopneuste Trochilus, Willow Wood-wren, MacGillivray, Brit. Birds, ii. 371.

85. Phyllopneuste Hippolais. Short-winged Wood-wren, or Chiff-chaff.

Length about four inches and a half; wings rather short, the second quill about the same length as the seventh; upper parts light greenish-brown tinged with grey, the feathers slightly edged with yellowish-green; lower parts brownish-white, tinged with yellow; bill and feet dark brown.

Male, $4\frac{1}{2}$, 6, $2\frac{2}{12}$, $\frac{9}{24}$, $\frac{8}{12}$, $\frac{9}{24}$, $\frac{2}{12}$.

Although very similar to the Willow Wood-wren, this species is easily distinguished by its shorter and more rounded wings. In form it approaches to the Reguli. It arrives about the beginning of April, departs in October, is generally distri-

buted, but nowhere very common, and much less numerous than the last species. It frequents thickets, hedges, and gardens, is extremely active, often pursues insects on wing, has a rapid flight, and a shrill, rather weak song, short, but pleasantly modulated. The nest is of an elliptical form, with the aperture near the top, and lined with feathers. The eggs, five or six, are seven-twelfths long, five and a half twelfths in breadth, white, with purplish-red spots.

Chip-chop. Hay Bird. Least Willow-wren.

Sylvia Hippolais, Lath. Ind. Ornith. ii. 507.—Sylvia rufa, Temm. Man. d'Ornith. i. 225.—Phyllopneuste Hippolais, Short-winged Wood-wren, or Chiff-chaff, MacGillivray, Brit. Birds, ii. 379.

GENUS XLVII. REGULUS. KINGLET.

Bill rather short, straight, very slender, rather broader than high at the base, compressed toward the end, acute; upper mandible with the ridge rather sharp, the edges slightly inflected toward the end, the notches wanting, the tip acute. Mouth narrow; tongue sagittate, slender, thin, concave above, slightly bristled at the tip; œsophagus narrow; stomach elliptical, compressed, its muscular coat thick, the epithelium dense and rugous; intestine short and of moderate width. Nostrils linear-oblong, covered by a single, delicate, oblong feather. Eyes of moderate size. Aperture of ear large, roundish. Head oblong, large; neck short; body moderate. Legs rather long; tarsus longer than the middle toe, slender, compressed anteriorly with a long slender plate and three scutella; toes rather large, the first stronger and almost equal in length to the third, the second and fourth nearly equal, the third and fourth united at the base; claws long, arched, extremely compressed, laterally grooved, acute. Plumage extremely soft and blended, almost downy; wings of ordinary length, broad, rounded, of eighteen quills, the first not half the length of the second, the fourth longest; tail of moderate length, narrow, arched at the base, slightly emarginate.

The Kinglets, which are the smallest birds of the family, inhabit the woods and thickets of the colder and temperate regions of both continents. They generally move in bands among the branches, searching assiduously for insects and

larvæ. One species is common in Britain, and one or two individuals of two others have been met with there.

86. Regulus auricapillus. Gold-crowned Kinglet.

Plumage of the upper parts light yellowish-brown, of the lower pale brownish-grey; the top of the head silky and reddish-orange, with a longitudinal band on each side of black feathers, of which the inner webs of the inner are lemon-yellow; the cheeks yellowish-grey. Female similar, but with the crown lemon-yellow. Young without yellow on the head, its upper part being light greyish-brown, with two lateral bands of greyish-black.

Male, $3\frac{3}{4}$, $6\frac{1}{2}$, $2\frac{1}{8}$, $\frac{9}{24}$, $\frac{8}{12}$, $\frac{9}{24}$, $\frac{2}{12}$. Female, $3\frac{1}{2}$, 6.

Generally abundant in woods, especially those of pine and fir, in all parts of Britain, but especially in Scotland, where it remains all the year. In winter it moves about in troops, often associating with Titmice, the Creeper, and other small birds. It is indigenous even in Orkney and Shetland, where there are no woods. Its song is short and feeble, its flight rapid, all its motions lively, and it clings to the twigs in all postures. Occasionally it betakes itself to low bushes, as broom and furze, or even heath. The nest is large, globular, formed of moss and lichens, interwoven with wool or hairs, and lined with feathers. The eggs, from five to eight, are broadly ovate, nearly six-twelfths in length, and nearly five-twelfths in breadth, brownish or reddish-white, darker at the larger end.

Golden-crested Wren. Marygold Finch. Tidley Goldfinch.

Motacilla Regulus, Linn. Syst. Nat. i. 338.—Sylvia Regulus, Temm. Man. d'Ornith. i. 229.—Regulus cristatus, Id. Ibid. iii. 157.—Regulus auricapillus, Gold-crowned Kinglet, MacGillivray, Brit. Birds, ii. 408.

87. Regulus ignicapillus. Fire-Crowned Kinglet.

Plumage of the upper parts light yellowish-brown, of the lower pale brownish-grey; the top of the head silky and reddish-orange, with a longitudinal band on each side of black feathers, the inner webs of some of which are pale yellow; the cheeks yellowish-grey; a black band in the loral space, and behind the eye, a narrower dusky band from the base of the lower mandible. Female with the crown dull pale orange, and the dusky bands on the cheek obscure.

Male, $3\frac{1}{12}$, . ., $2\frac{3}{12}$, $\frac{3}{8}$, $\frac{8}{12}$, $\frac{9}{24}$, $\frac{5}{24}$.

This species, easily distinguished by the two black bands on each side of the head, but otherwise very similar to the last,

has occurred in a very few instances, in the south-eastern parts of England; the first individual found having been obtained by Mr Jenyns, in his garden, at Swaffham Bulbeck, near Cambridge, in the autumn of 1832. It is said to be dispersed over the continent, and to be migratory.

Sylvia ignicapilla, Temm. Man. d'Ornith. i. 231.—Regulus ignicapillus, Id. Ibid. iii. 158.—Regulus ignicapillus, Fire-crowned Kinglet, MacGillivray, Brit. Birds, ii. 416.

88. Regulus modestus. Plain-crowned Kinglet.

Not having seen this bird, first described by Mr Gould, I transcribe from the Annals of Natural History, the following notice, by Mr Hancock of Newcastle-on-Tyne, respecting an individual shot on the 26th of September 1838:—"The whole of the upper plumage a greenish-yellow; on the centre of the crown of the head is a streak of paler; a light lemon-coloured streak extends over the eye from the base of the bill to the occiput; a short streak of the same colour passes beneath the eye, and a narrow band of dusky passes through the eye, and reaches the termination of the auriculars. The under parts pale yellow; the ridge of the wing bright lemon-colour; wing-feathers dusky, edged with pale yellow, becoming broader on the secondaries; two conspicuous bands of lemon-colour cross the coverts; the wings reach to within three-fourths of an inch of the end of the tail. Bill brown, with the under mandible paler at the base; mouth yellow; legs and toes brown, with the under surface of the toes inclining to yellow; claws brown.

"Its manners, as far as I had an opportunity of observing them, were so like those of the Golden-crested Wren, that at first I mistook it for that species. It was continually in motion, flitting from place to place in search of insects on umbelliferous plants, and such other herbage as the bleak banks of the Northumberland coast affords. Such a situation could not be at all suited to the habits of this species, and there can be little doubt that it had arrived at the coast previous to, or immediately after, its autumnal migrations." This species is said to want the loose oblong feather which covers the nostril in all the rest.

$4\frac{1}{16}$, $6\frac{1}{2}$, $2\frac{1}{16}$, $\frac{7}{16}$.

Regulus modestus, Gould, Temm. Man. d'Ornith. iv. 618.

GENUS XLVIII. SIBILLATRIX. CHIRPER.

Bill of moderate length, straight, very slender, slightly

broader than high at the base, much compressed toward the end; upper mandible with the ridge narrow at the base, the edges a little inflected, the notches slight, the tip very narrow; gape-line nearly straight. Nostrils linear-oblong, pervious, in the fore part of the nasal membrane, which is feathered behind. Eyes of moderate size. Aperture of ear large, roundish. Head ovato-oblong, flattened above, very narrow before; neck rather short; body slender. Feet of moderate length, tarsus rather long, extremely compressed, with eight large distinct anterior scutella; toes extremely compressed, the lateral equal and rather long, the hind toe large, but shorter than the third, which is united with the fourth at the base; claws rather long, moderately arched, extremely compressed, laterally grooved, very acute. Plumage soft and blended; wings of moderate length, a little curved, broad, rounded, of eighteen quills; the first very small, the third longest; tail rather long, broad, graduated, nearly straight.

The extremely compressed bill, and fan-shaped tail, distinguish this genus, of which we have only one species.

89. Sibillatrix Locustella. Grasshopper Chirper.

Tail long, much graduated, and rounded; plumage of the upper parts dull olive-brown, with oblong dusky spots, of the lower parts pale yellowish-brown, the fore part of the neck with a few dusky lines, the tail-coverts with a central brown mark. Female similar, but without the dusky lines on the fore part of the neck. Young yellowish-brown, spotted with dusky above, brownish-yellow beneath.

Male, $5\frac{8}{12}$, $7\frac{1}{2}$, $2\frac{1}{2}$, $\frac{9}{24}$, $\frac{10}{12}$, $\frac{7}{12}$, $\frac{5}{24}$. Female, $5\frac{8}{12}$, $7\frac{1}{2}$.

This slender and elegantly formed, but plainly coloured little bird, is remarkable for its hideling habits, and its peculiar cry, which greatly resembles that of the mole-cricket. It arrives from the middle to the end of April, and is generally dispersed in England. It has also been found in a few instances in the south of Scotland. The nest is composed of dry grass, lined with similar but finer materials. The eggs in one found by Mr Weir in Linlithgowshire, were white, closely freckled with carmine dots.

Grasshopper Warbler. Cricket Bird. Brakehopper.

Sylvia Locustella, Lath. Ind. Orn. ii. 515.—Sylvia Locustella, Temm. Man. d'Ornith. i. 184.—Sibilatrix Locustella, Grasshopper Chirper, MacGillivray, Brit. Birds, ii. 399.

GENUS XLIX. CALAMOHERPE. REEDLING.

Bill of moderate length, straight, slender, broader than high at the base, compressed toward the end; upper mandible with its dorsal line slightly declinate, towards the end a little convex, the ridge narrow at the base, the edges direct, the notches obscure, the tip narrow; lower mandible with the edges inflected, the tip acute; gape-line straight. Mouth of moderate width; tongue of ordinary length, very narrow, sagittate and papillate at the base, concave above, horny toward the end, bristly on the edges at the tip, which is slit; œsophagus of moderate width, nearly uniform; proventriculus oblong; stomach of moderate size, elliptical, compressed, its lateral muscles moderately thick, the tendons rather large, the cuticular lining dense and longitudinally rugous; intestine of moderate length and width; cœca very small. Nostrils elliptical, pervious. Eyes of moderate size. Aperture of ear large, roundish. Head ovate, flattened above, narrow before; neck short; body slender. Feet of moderate length; tarsus much compressed, with eight anterior scutella; toes much compressed, the second and fourth about equal, the first strongest, the third and fourth united at the base; claws long, moderately arched, extremely compressed, laterally grooved, very acute. Plumage generally blended; bristles rather strong; wings of moderate length, a little curved, broad; the first quill extremely small, the second and third longer; tail rather long, straight, rounded.

The species of this genus are remarkable for their habit of frequenting marshy places, and the banks of rivers and lakes, among the willows, reeds, and sedges of which they seek their food, creeping along the stalks and foliage. Unless in having the tarsi more elongated, the claws larger, and the wings shorter and more concave, they differ little from some of the Sylviæ.

90. Calamoherpe phragmitis. Sedge Reedling.

Tail rather long, slightly rounded; upper part of the head brownish-black, the feathers edged with light brown; back and wing-coverts light olive-brown tinged with yellow, the central part of each feather dark brown; rump light reddish-brown; a yellowish-white streak over the eye; lower parts

brownish-white, the lower tail-coverts unspotted. Female similar, but with the upper part of the head more tinged with brown, the back of a lighter tint, the rump less bright. The young resemble the adults, but are more tinged with red.

Male, $5\frac{4}{12}$, $7\frac{8}{12}$, $2\frac{8}{12}$, $\frac{11}{24}$, $\frac{10}{12}$, $\frac{6}{12}$, $\frac{3}{12}$, . Female, $5\frac{6}{12}$, $7\frac{9}{12}$.

The Sedge Reedling, which is rather common in many of the marshy parts of England, but rare in Scotland, arrives in the end of April, and departs in the beginning of October. Its favourite resorts are places overgrown with reeds and other tall aquatic plants, among which it searches for its insect food, and places its nest, which is bulky, loosely constructed of grasses, and lined with finer materials of the same nature, with some hair. The eggs, generally five, are eight-twelfths long, six-twelfths in breadth, of a greenish-white colour, dotted and freckled with light brown and greenish-grey. This bird has a lively, modulated, and mellow song, which is often heard very late at night. It is very active and lively, but from its mode of life is seldom seen.

Sedge Warbler. Sedge-bird. Sedge-wren.

Sylvia Salicaria, Lath. Ind. d'Ornith. ii. 516.—Sylvia phragmitis, Temm. Man. d'Ornith. i. 189.—Calamoherpe phragmitis, Sedge Reedling, MacGillivray, Brit. Birds, ii. 390.

91. Calamoherpe arundinacea. Marsh Reedling.

Tail rather long, considerably rounded; upper parts of a uniform light olive-brown, without spots; lower parts pale greenish-yellow, throat white. Female somewhat smaller, but otherwise similar.

Male, $5\frac{1}{2}$, .., $2\frac{9}{12}$, $\frac{6}{12}$.

This species, which is distinguished by having the upper parts of a uniform tint, they being spotted with dusky in the other, arrives in the end of April, and disperses over the southern and middle parts of England. Its habits are similar to those of the Sedge Reedling; its song, loud, cheerful, much diversified, and sometimes performed at night. The nest, of an obconical form, is fastened to the stalks of several reeds, nettles, or other tall plants, at some distance from the ground. The eggs, four or five, are eight and a half twelfths long, nearly six-twelfths in breadth, greyish-brown, faintly dotted and spotted with greenish-brown.

Reed Warbler. Reed Wren.

Motacilla arundinacea, Gmel. Syst. Nat. i. 992.—Sylvia arundinacea, Temm. Man. d'Ornith. i. 191.—Calamoherpe arundinacea, Marsh Reedling, MacGillivray, Brit. Birds, ii. 395.

GENUS L. ANORTHURA. WREN.

If we shorten the tail of a Calamoherpe and turn it up a little, we shall have something like a Wren. In our species, the bill is also more slender than in Calamoherpe, and somewhat arched, but in several American birds of this group, it is much stouter. Probably the Wrens ought to form a family apart; but I prefer attaching our only species to the Sylviinæ. They might perhaps with equal propriety be referred to the Creepers, Reptatrices.

Bill of moderate length, slender, tapering, acute, slightly arched, subtrigonal at the base, compressed toward the end; upper mandible with its dorsal line slightly arched, the ridge narrow, the notches wanting; lower mandible with the edges inflected, the dorsal line straight; gape-line very slightly arched. Tongue sagittate, very slender, tapering, concave above, slightly jagged toward the tip; œsophagus of moderate width, uniform; stomach roundish, very muscular, with dense, longitudinally rugous epithelium; intestine short and rather wide; cœca very small. Nostrils linear-oblong, operculate. Eyes of moderate size. Aperture of ear large, roundish. Head of moderate size, ovate; neck short; body ovate. Feet of ordinary length; tarsus compressed, with seven anterior scutella, of which the upper are indistinct; toes rather large, compressed; first longer than the two lateral, of which the inner is a little shorter, the third and fourth coherent at the base; claws long, arched, extremely compressed, laterally grooved, acute. Plumage soft and blended; no bristles; wing shortish, broad, concave, much rounded; the first quill short, the third, fourth, fifth, and sixth nearly equal and longest; tail short or moderate, rounded, generally raised.

The Wrens, of which only one species occurs in Britain, are remarkable for their abbreviated form, and the elevated direction of the tail. They construct a very bulky nest, of an oblong or spherical form, and lined with moss and feathers. The eggs are numerous, generally white, more or less dotted or spotted.

92. Anorthura Troglodytes. European Wren.

Upper parts reddish-brown, lower light greyish-brown; a

brownish-white streak over the eye; the hind parts of both surfaces barred with dusky; two transverse bands of white dots on the wings. The female is considerably smaller, and less brightly coloured, with more brown on the lower parts. The young are destitute of the white spots on the wings. Great differences in size and tint are observed.

Male, $4\frac{1}{2}$, $6\frac{1}{2}$, $1\frac{11}{12}$, $\frac{11}{24}$, $\frac{8}{12}$, $\frac{13}{24}$, $\frac{5}{24}$. Female, 4, $6\frac{1}{4}$.

The Wren is generally dispersed, and permanently resident. It frequents stone walls, fragments of rocks, thickets of gorse, hedge-banks, woods, and gardens. Its food consists of insects, small seeds, and soft fruits; its song, full, rich, and mellow, is surprisingly loud; its flight rapid, even, and short. Although not essentially a climber, it clings to perpendicular surfaces sidewise, and is often seen on trees. The nest is enormously large, roundish, or oblong, composed chiefly of moss, and lined with feathers. The eggs are elongated oval, eight-twelfths long, six-twelfths in breadth, pure white, with scattered dots of light red.

Wren. Kitty Wren.

Motacilla Troglodytes, Linn. Syst. Nat. i. 337.—Sylvia Troglodytes, Temm. Man. d'Ornith. i. 233.—Troglodytes vulgaris, Id. Ibid. iii. 160.—Anorthura Troglodytes, European Wren, MacGillivray, Brit. Birds, iii. 15.

FAMILY XIX. MOTACILLINÆ. MOTACILLINE BIRDS, OR WAGTAILS.

The family of Motacillinæ, which is variously allied to the Sylviinæ, Saxicolinæ, and Alaudinæ, is readily distinguished by its very elongated tail, and the peculiar form of the wings, of which the inner secondaries are pointed, and one of them as long as the outer primaries when the wing is closed. They are of slender form, with the neck rather short, and the head oblong.

Bill of moderate length, straight, slender, rather broader than high at the base, compressed beyond the nostrils; upper mandible with its dorsal line straight and a little declinate, the notches slight or obsolete, the tip narrow, slightly deflected; lower mandible with the angle rather long and narrow, the dorsal line ascending and nearly

straight, the edges inflected, the tip acute; gape-line straight. Both mandibles internally concave and narrow, with a median prominent line; tongue very slender, emarginate and finely papillate at the base, flat, tapering to a slit point; œsophagus narrow, uniform; proventriculus oblong; stomach a gizzard of considerable power, roundish or elliptical, with distinct lateral muscles, and dense, thin, longitudinally rugous epithelium; intestine short, of moderate width; cœca very small, cylindrical. Nostrils elliptical, or oblong, in the lower and fore part of the nasal depression, which is feathered at the base. Eyes of moderate size. Aperture of ear large, transversely oval. Feet of ordinary length, slender; tarsus much compressed, the outer slightly united at the base; claws of moderate length, curved, or long and slightly curved, extremely compressed, acute. Plumage soft and blended, the feathers ovate, of loose texture; wings rather long, broad, of eighteen quills, the first obsolete, the next three nearly equal, and longest; one of the inner secondaries very long; tail long, of twelve narrow feathers.

These birds reside in pastures and meadows, frequent the sides of streams and lakes, or the sea-shore, run with great celerity, and almost constantly vibrate their body, like the Totani. Their flight is rapid and undulating; their voice shrill. They feed on insects, larvæ, and small crustacea and mollusca. They are allied to the Saxicolæ and Sylviæ on the one hand, to the Alaudinæ on the other.

GENUS LI. MOTACILLA. WAGTAIL.

Bill of moderate length, slender, straight, a little broader than high at the base, compressed toward the end, its upper outline slightly declinate at the base, then straight, and at the end very slightly decurved, the notches obsolete, the tip acute. Tongue very slender, sagittate and papillate at the base, tapering to a slit point; œsophagus of moderate width; stomach oblong, compressed, with the muscular coat thick,

the tendons large, the epithelium dense, thin, and slightly rugous; intestine short, of moderate width; cœca very small, cylindrical. Nostrils small, elliptical. Eyes moderate. Ear large, elliptical. Head ovato-oblong, small, narrow; neck of moderate length; body ovate. Feet of ordinary length; tarsus much compressed, with seven distinct scutella; toes moderate, much compressed, the first large, the lateral about equal; claws rather long, arched, laterally grooved, extremely compressed, tapering to a fine point. Plumage soft and blended; no bristles; wings long, broad, of eighteen quills, of which nine are primary, the outer three nearly equal, and longest; inner secondaries very long; tail very long, straight, slender, rounded.

The Wagtails are remarkable for their peculiarly slender and elegant form, and the vibratory motion which the body exhibits while they are standing or walking. While searching for food they walk or run, but never hop. They moult in autumn, and again partially in spring.

93. Motacilla Yarrelli. Pied Wagtail.

Male in winter with the forehead, throat, lower parts, and two bands on the wing, white; a black crescent on the fore neck; the head, hind neck, and rump, black, the middle of the back grey; wing-coverts black, the larger margined and tipped with white; quills black, edged with white; tail black, the two lateral feathers white, excepting part of their inner webs. Female with more grey on the back, but otherwise similar. Male in summer with the whole fore neck glossy black, as is the back, except a tinge of grey about the middle. Female similar, but with more grey. Young light grey above, greyish-white beneath, with a dusky crescent on the fore neck.

Male, $7\frac{3}{4}$, $11\frac{1}{2}$, $3\frac{1}{2}$, $\frac{6}{12}$, $\frac{11}{12}$, $\frac{6}{12}$, $\frac{3}{12}$. Female, $7\frac{1}{2}$, $11\frac{1}{4}$.

A very common and elegant bird, generally distributed in Britain and Ireland, but on the Continent hitherto observed only in the north of France, in Sweden, and Norway. It usually frequents the margins of streams, ditches, pools, and lakes, but is often seen in dry pastures, in stony places, and on housetops. It feeds on insects, larvæ, worms, and small mollusca; has an elegant, undulated flight, and often pursues insects on the wing. The nest, which is placed by the side of a river or stream, on a rocky bank, in a quarry, or among grass, or on a heap of stones, or in a hole in a wall, is composed of dry grass, moss, and leaves, and lined with wool and hair, sometimes

with feathers. The eggs, five or six, are greyish-white, spotted with grey and brown, their length nine-twelfths, their breadth seven-twelfths and a quarter.

It has been proposed, by the Prince of Canino and Mr Gould, to name this, *our* most common Wagtail, *Motacilla Yarrelli*, because it differs in colour from a Wagtail common in the temperate parts of the Continent, and which, it is said, must have been that which Linnæus named *Motacilla alba*. But as our bird occurs in Sweden, where Linnæus lived, as his definition agrees precisely with it, and as he refers to our Willoughby and Ray, who must have described it, I think we might as well leave its old name of *Motacilla alba* with it, were it not that the bird not being actually *white*, it is somewhat incorrect. In a genus like this, where there are so many species that are in part white, or grey, or yellow, all names indicative of such colours might very well be discarded. I am not at all convinced, however, that our present bird and the Grey-backed Wagtail of the Continent are specifically distinct; for in every particular, except colour, they agree most accurately.

White Wagtail. Black-and-White Wagtail. Water Wagtail. Winter Wagtail. Dish-washer.

Motacilla alba, Linn. Syst. Nat. i. 331.—Motacilla Yarrelli, Bonap. Temm. Man. d'Ornith. iv. 620.—Motacilla Yarrelli, Pied Wagtail, MacGillivray, Brit. Birds, ii. 225.

The species or variety with which this has been confounded, not having with absolute certainty been found in Britain, although I think I have several times met with it, perhaps ought not to be included in this manual; but its description is given in case some of my readers should meet with it.

94. Motacilla Brissoni. Grey-and-White Wagtail.

Male in winter with the forehead, sides of the head, throat, and lower parts, white; a black crescent on the fore neck; the head, nape, and upper tail-coverts black; the back and sides ash-grey; wing-coverts blackish, the lower margined and tipped with white; quills greyish-black, edged with white; tail black, the two lateral feathers white, excepting part of their inner webs. Female similar, but with the black less extended on the nape, the wing-coverts and crescent on the fore neck dusky grey. Male, in summer, with the whole fore neck black, the upper parts of a darker grey. Female similar, but with the fore neck greyish-black. Young light grey above, greyish-white beneath, with a grey crescent on the fore neck.

Male, $7\frac{1}{4}$, .., $3\frac{2}{12}$, $\frac{6}{12}$, $\frac{1}{12}$, $\frac{6}{12}$, $\frac{3}{12}$.

The habits of this species are described as being precisely similar to those of Motacilla Yarrelli. M. Temminck considers the one to be merely a race or variety of the other. They differ in nothing but colour. Having procured a great number of specimens of both, and carefully compared them, I can find no other distinction. But this grey-backed bird is of extremely rare occurrence with us; and perhaps the individuals which I have examined may not belong to it, although they agreed in all respects with specimens from the neighbourhood of Paris. Although there may be some doubt, I am unwilling to eject the bird from our Fauna. Supposing Linnæus's name of *Motacilla alba*, and his specific description, to agree with this as well as with the last species, I yet think that as the one has been named after Mr Yarrell, "as a just tribute to his varied talents as a naturalist," the other may be named after Brisson, of whose talents as an accurate describer of birds nothing requires to be said.

Motacilla alba, Linn. Syst. Nat. i. 331.—Motacilla alba, Temm. Man. d'Orn. i. 255.—Grey-and-White Wagtail, MacGillivray, Brit. Birds, ii. 221.

95. Motacilla Boarula. Grey-and-Yellow Wagtail.

Male in winter with the head and back bluish-grey, tinged with green, the rump greenish-yellow, the throat greyish-white, the lower parts bright yellow. Female similar, but somewhat paler. Male in summer with a black patch on the throat, laterally edged with white bands. Female similar, but paler, and having the black on the throat tinged with grey. Young grey, tinged with green above, greyish-white on the throat, with a faint crescent of dull grey.

Male, $8\frac{1}{4}$, $10\frac{1}{4}$, $3\frac{1}{4}$, $\frac{11}{24}$, $\frac{10}{12}$, $\frac{13}{24}$, $\frac{3}{12}$. Female, $7\frac{10}{12}$, 10.

This species is permanently resident, although in most of the northern districts it disappears in winter. It frequents the margins of streams, pools, and lakes; and is generally distributed in the lower and more cultivated parts. Its food consists of insects, which it usually picks from the ground, although it often performs a short aerial excursion in pursuit of them. It generally builds in a rocky place near water, or among stones or grass. The nest is lined with wool, hair, and feathers. The eggs, from five to eight, are nine-twelfths long, seven-twelfths in breadth, greyish-white, spotted all over with faint greyish-brown.

Grey Wagtail. Yellow Wagtail.

Motacilla Boarula, Linn. Mant. 527.—Motacilla Boarula, Temm. Man. d'Ornith. i. 257.—Motacilla Boarula, Grey-and-Yellow Wagtail, MacGillivray, Brit. Birds, ii. 235.

GENUS LII. BUDYTES. QUAKETAIL.

The Quaketails are distinguished from the Wagtails chiefly by having the tail shorter, and the claws less arched and longer, that of the hind toe especially being much elongated.

Bill of moderate length, slender, straight, broader than high at the base, compressed toward the end; upper mandible with the dorsal line slightly declinate at the base, very slightly declinato-arcuate toward the end, the ridge narrow at the base, the edges slightly inflected, the notches very slight, the tip narrow and rounded; lower mandible with the dorsal line straight, the edges inflected, the tip acute. Tongue sagittate and papillate at the base, very slender, tapering to a slit point; œsophagus of moderate width; proventriculus oblong; stomach a gizzard of considerable power, oblong, compressed, its muscular coat thick, the epithelium dense, and slightly rugous; intestine short, of moderate width; cœca very small, cylindrical. Nostrils small, elliptical, pervious. Eyes of moderate size. Aperture of ear large, elliptical. Head ovato-oblong, small, narrow; neck rather short; body ovate, slender. Feet of ordinary length, slender; tarsus much compressed, with eight anterior scutella; toes of moderate length, much compressed, the first large, the lateral about equal, the third and fourth united at the base; claws long, extremely compressed, laterally grooved, slightly arched, that of the hind toe very long. Plumage soft and blended; bristles extremely small; wings long, of eighteen quills, the first three nearly equal, one of the inner secondaries very long; tail long, slender, rounded.

These birds form the transition from the Wagtails to the Pipits, which belong to the family of Alaudinæ. They feed on insects and larvæ; frequent open pastures, moist meadows, and ploughed fields, run with great celerity, often pursue insects on wing, and have a rapid undulated flight.

96. BUDYTES RAYI. GREEN-HEADED QUAKETAIL.

Male with the head greenish-yellow, the cheeks and lower parts bright yellow, the back pale greenish-brown, the two lateral tail-feathers on each side partially white. Female similar, but with the head yellowish-green, and the lower parts paler. Young light brownish-grey above, the wings and tail dusky, the lateral feathers of the latter as in the adult, the lower parts cream-coloured, with an obscure dusky crescent on the fore neck.

Male, $6\frac{3}{4}$, $10\frac{1}{2}$, $3\frac{2}{12}$, $\frac{6}{12}$, $\frac{10}{12}$, $\frac{7}{12}$, $\frac{3}{12}$. Female, $6\frac{3}{4}$, 10.

This species, the Yellow Wagtail of British ornithologists, has been found to differ from the bird so called by those of the Continent, which has the head greyish-blue, although in all other respects precisely similar. Supposing then that Linnæus by his Motacilla flava meant the Grey-headed bird of the Continent, of which a very few individuals only have been met with in this country, Mr Gould and the Prince of Canino named our common bird *Budytes Rayi*. But Linnæus has referred to Ray and Willoughby, as well as to Gesner and Aldrovandi, and therefore his Motacilla flava includes both alleged species. If the present then be named after Ray, I think the other ought to be named after Mr Gould, who first distinguished the two. The Green-headed Quaketail is migratory, arriving in the end of spring, and disappearing in September. Its habits are similar to those of the Wagtails, but it is more addicted to searching for insects on plants. Its nest is lined with hair, and the eggs, four or five in number, are pale brown, sprinkled with dots of a darker tint.

Yellow Wagtail. Spring Wagtail. Summer Wagtail. Oatseed Bird. Oatear.

Motacilla flava, Linn. Syst. Nat. i. 331.—Motacilla flaveola, Temm. Man. d' Ornith. iii. 183.—Budytes Rayi, Green-headed Quaketail, MacGillivray, Brit. Birds, ii. 212.

97. BUDYTES GOULDI. BLUE-HEADED QUAKETAIL.

Male with the head, hind neck, and ear-coverts greyish-blue; a white band over the eye; the upper parts yellowish-green, the lower bright yellow, the two lateral tail-feathers on each side partially white. Female similar, but with the head brownish-grey, the upper parts tinged with greyish-brown, and the throat white. Young light brownish-grey above, the wings and tail dusky, the lateral feathers of the latter as in the adult, the lower parts yellowish-white, with an obscure dusky crescent on the fore neck.

Male, $6\frac{3}{4}$, .., $3\frac{2}{12}$, $\frac{6}{12}$, $\frac{10}{12}$, $\frac{7}{12}$, $\frac{3}{12}$. Female, $6\frac{1}{2}$.

This species, generally dispersed over the Continent, where the other is not met with, has been found in a few instances in the south-eastern parts of England. The first specimen was obtained, in October 1834, near Colchester, by Mr H. Doubleday. I have compared numerous specimens of both species, and find intermediate shades of colour. As in the case of the two Wagtails, M. Temminck considers them merely as races.

Yellow Wagtail. Blue-headed Wagtail.

Motacilla flava, Linn. Syst. Nat. i. 331.—Motacilla flava, Temm. Man. d'Ornith. i. 260.—Budytes flava, Blue-headed Quaketail, MacGillivray, Brit. Birds, ii. 208.

FAMILY XX. ALAUDINÆ. ALAUDINE BIRDS, OR LARKS.

Body moderately stout or slender; neck rather short; head oblong, of ordinary size. Bill short, straight, somewhat conical, nearly as high as broad at the base, slightly compressed; upper mandible with its dorsal line deflected and slightly convex, the ridge narrow, the nasal sinus long and anteriorly rounded, the edges without notch, the tip rather acute; lower mandible with the angle rather narrow, the dorsal line very slightly convex, the tip rather acute; the gape-line straight. Mouth rather narrow; tongue of moderate length, narrow, at the base emarginate and papillate, the tip slit, and terminated by two small, bristly tufts; œsophagus of moderate width, nearly uniform; proventriculus oblong; stomach a remarkably powerful gizzard, of a roundish form, somewhat compressed, with thick lateral muscles, large tendons, and dense rugous epithelium, which is much thicker and nearly smooth opposite the muscles; intestine of moderate length, rather wide; cœca very small, cylindrical; rectum gradually dilated. Nostrils elliptical, basal, anteriorly marginate. Eyes of moderate size, eyelids feathered. Aperture of ear, large, roundish. Feet of moderate length; tarsus slender, compressed, with seven or eight dis-

tinct anterior scutella; toes slender, hind toe large, lateral about equal; anterior claws rather long, slender, compressed, slightly arched, acute, that of the hind toe extremely long and nearly straight. Plumage ordinary, the feathers ovato-oblong; frontal feathers encroaching on the nasal membrane; basirostral bristles small; wings long, broad, with eighteen quills; the first minute, the next three longest, one of the inner secondaries very long. Tail rather long, straight, deeply emarginate, of twelve rather narrow feathers.

The Larks are intimately allied to the Wagtails on the one hand, and to the Thrushes on the other, while in some respects they are approximated to the Buntings and Finches; but they do not belong to the Conirostral or Thick-billed Birds, as most authors suppose, for their bill is differently formed, and they never shell or husk seeds, but swallow them entire. They feed on insects, worms, and seeds, along with which they pick up particles of gravel and sand. They reside chiefly in the open fields and pastures, run with considerable celerity, generally in a half-crouching posture, and have a rapid and undulated flight, with a peculiar fluttering mode of flying while singing. Their song, although pleasing, is not generally melodious, but in several species is extremely protracted. They nestle on the ground, laying from four to six spotted eggs. Seven species occur in Britain.

GENUS LIII. ANTHUS. PIPIT.

Bill of moderate length, slender, straight, compressed toward the end; upper mandible with the dorsal line slightly declinate at the base, very slightly declinato-arcuate toward the end, the ridge narrow at the base, the sides convex, the notches slight, the tip narrow but rounded; lower mandible with the angle rather long, the dorsal line straight, the sides convex, the edges erect, the tip narrow; gape-line straight, a little deflected at the base. Mouth of moderate width; tongue very slender, sagittate and finely papillate at the base,

tapering to a slit point; œsophagus of moderate width, without crop; proventriculus oblong; stomach roundish, compressed, with distinct strong muscles, large tendons, and dense, rugous epithelium; intestine short; cœca very small and cylindrical. Nostrils oblong, pervious, in the lower and fore part of the rather large nasal depression, which is feathered behind. Eyes of moderate size. Aperture of ear large, transversely oval. Head small, narrow, ovato-oblong: neck rather short; body ovate, slender. Feet rather long; tarsus much compressed, with eight anterior scutella; toes rather long, slender, compressed; the first large, second and fourth about equal, third and fourth united at the base; claws long, slightly arched, extremely compressed, laterally grooved, acuminate. Plumage soft, on the upper parts rather compact, on the lower blended; wings rather long, of eighteen quills, the outer four nearly equal and longest, inner secondaries long and tapering; tail rather long, straight, emarginate.

The Pipits, although of a more slender form than the Larks, are very closely allied to them; as they also are to the Wagtails, which differ chiefly in being of a more delicate form, with the tail much longer. They are small, active, restless birds, remarkable for their sharp, rather weak notes, which they utter in a rapid manner, and for their habit of vibrating the body when standing. They frequent meadows and pastures; feed on worms, insects, and sometimes seeds; have a rapid, wavering, undulatory flight, nestle among the grass; and lay four or five dull-coloured spotted eggs.

98. Anthus pratensis. Meadow Pipit.

Upper parts olivaceous, spotted with dusky; lower parts brownish-white, anteriorly tinged with red; neck, sides, and fore part of breast marked with ovato-oblong, brownish-black spots; the first quill shorter than the fourth; the hind claw slightly arched, extremely slender, much longer than the first joint of its toe, and about five-twelfths and a half long; feet light yellowish-brown, claws dusky. In summer the colours are much faded, owing to the abrasion of the greenish margins of the feathers. The young have the upper parts more tinged with yellowish-green, and the dusky spots larger.

Male, 6, $9\frac{3}{4}$, 3, $\frac{5}{12}$, $\frac{9}{12}$, $\frac{8}{12}$, $\frac{3}{12}$. Female, $5\frac{10}{12}$, $9\frac{1}{2}$.

This species is very common and generally distributed, occurring in the interior as well as on the coast, and frequenting wet meadows, moors, commons, and pasture land. In winter it becomes occasionally gregarious, and betakes itself to marshy places, often to the sea-shore. Its ordinary flight is wavering and desultory. It feeds on worms, larvæ, pupæ, insects, and sometimes seeds. Its song is rather pleasant, composed of a series of sharp modulated notes, which it utters on wing, while descending with expanded wings and tail. The nest is usually placed on a grassy bank, or beside a tuft or turf, and is bulky, but neatly constructed, the exterior being formed of stems and leaves of grasses, the interior of finer straws, sometimes fibrous roots, and occasionally a good deal of hair. The eggs usually five, vary in size and colour, but are generally nine and a half twelfths long, seven and a half twelfths in breadth, brownish-white or grey, dotted and freckled with purplish-grey, reddish-brown, or dusky. Two broods are reared. It is to this species that the charge of the young Cuckoo is most frequently consigned.

Titlark. Titling. Common Titlark. Moss-cheeper.

Alauda pratensis, Lath. Ind. Ornith. ii. 493.—Pipit Farlouse, Anthus pratensis, Temm. Man. d'Ornith. i. 269.—Anthus pratensis, Meadow Pipit, MacGillivray, Brit. Birds, ii. 181.

99. Anthus arboreus. Tree Pipit.

Upper parts olivaceous, spotted with dusky; lower parts brownish-white, anteriorly tinged with reddish-yellow; the neck, sides, and fore part of the breast marked with ovato-oblong, brownish-black spots; the first quill longest; the hind claw strongly arched, rather shorter than the first joint, and about four and a half twelfths long; the feet and claws pale greyish-yellow. Young with the upper parts more tinged with green, and marked with darker spots.

Male, $6\frac{2}{12}$, $10\frac{1}{4}$, $3\frac{1}{2}$, $\frac{11}{24}$, $\frac{10}{12}$, $\frac{8}{12}$, $\frac{3}{12}$. Female, 6, 10.

Unlike the last species, which is permanently resident, this is a summer visitant, arriving in the end of April, and departing in September. It frequents the cultivated parts in the vicinity of woods and thickets; is generally dispersed in England, and occurs more sparingly in the south of Scotland. Its song, which is superior to that of the Meadow Pipit, is performed in the same manner. This species more commonly perches on trees, on which it also sometimes sings; but it

nestles on the ground, laying four or five eggs, which vary much in size and colour, but average nine-twelfths in length, and seven-twelfths in breadth, and are usually purplish or greyish-white, with spots, or dots, or blotches of dark red or purplish-brown.

Meadow Lark. Short-heeled Field Lark.

Alauda trivialis, Linn. Syst. Nat. i. 288.—Anthus arboreus, Temm. Man. d'Ornith. i. 271.—Anthus arboreus, Tree Pipit, MacGillivray, Brit. Birds, ii. 188.

100. Anthus obscurus. Dusky or Shore Pipit.

Upper parts olivaceous, obscurely streaked with dusky; a short yellowish band behind the eye; lower parts yellowish-grey; outer tail-feather pale grey in the terminal half of the outer web and the tip of the inner; the neck, sides, and fore part of the breast marked with oblong, undecided dusky, or olivaceous spots; the first and second quills longest; the hind claw moderately arched, about the same length as the first joint. In summer, when the margins of the feathers are abraded, the upper parts are of a nearly uniform greyish-brown tint. The young have the feathers of the upper parts dark brown, edged with oil-green, the lower parts more yellow than in the adult, and all streaked with olive-brown, except the abdomen.

Male, $6\frac{9}{12}$, $10\frac{3}{4}$, $3\frac{5}{12}$, $\frac{15}{24}$, $\frac{11}{12}$, $\frac{8}{12}$, $\frac{3}{12}$. Female, $6\frac{6}{12}$, $10\frac{1}{2}$.

This species, which is considerably larger, and of duller tints, than the preceding, is permanently resident, and generally distributed, but entirely confined to the sea-shore. It resembles the other species in its habits. The nest is placed on a grassy bank, or among moss, in some rocky place on the coast. The eggs, four or five, are ten-twelfths and a half long, eight-twelfths broad, greyish, or greenish-grey, freckled with purplish-grey. It was first described by Latham and Lewin under the name of Dusky-Lark, Alauda *obscura*, afterwards by Montagu under that of Alauda *petrosa*, or Rock-Lark. Being the same species as Anthus *aquaticus* of Temminck, that name was usually given to it; but latterly that ornithologist finds that he has confounded two distinct species, and proposes adopting for the present that of Anthus obscurus, for the first application of which he refers to Gmelin, the "bungling compiler," as some writers on birds, not very politely, but truly calls him. Now, perhaps, Montagu was the first who very clearly and intelligibly distinguished and described the bird; and yet I think Latham's brief description of it is better than the specific characters of hundreds of birds, as given by au-

thors; so that, on the whole, I think it ought to be called the Dusky Pipit, Anthus obscurus.

Rock Pipit. Rock Lark. Sea Lark. Dusky Lark.

Alauda obscura, Gmel. Syst. Nat. i. 801.—Alauda obscura, Lath. Ind. Ornith. ii. 494.—Alauda petrosa, Mont. Linn. Trans. & Ornith. Dict.—Anthus obscurus, Temm. Man. d'Ornith. iv. 628.—Anthus aquaticus, Shore Pipit, MacGillivray, Brit. Birds, ii. 194.

101. Anthus Spinoletta. Red-breasted Pipit.

Upper parts greyish-brown, very slightly tinged with olivaceous, the central part of each feather of a darker tint; a yellowish-white band from the bill over the eye; outer tail-feather with an oblique greyish-white band, including the greater part of the outer and the extremity of the inner web, the next feather with the tip greyish-white; lower parts yellowish-grey, the breast and lower part of the neck tinged with red; the sides and lower part of the neck, the fore part of the breast, and the sides of the body, marked with oblong greyish-brown spots; hind claw moderately arched, and rather longer than the first joint; bill and feet more slender than in Anthus obscurus.

This species being now for the first time introduced into our Fauna, it will not be judged inexpedient to present an extended description of it. Finding in one of my note-books a very particular account of two Pipits, obtained in the neighbourhood of Edinburgh, and examined by me on the 2d June 1824, when they were recent, and in the possession of the late Mr John Wilson, and which I found to be different from any with which I was then acquainted; and observing that M. Temminck, in the fourth volume of his manual, has described an Anthus which he had previously confounded with A. obscurus, under the common name of A. aquaticus; I was induced to examine all the Pipits I could find, and among others, those in the British Collection in the Museum of the University of Edinburgh, to which the great liberality of Professor Jameson has allowed me free access. Among these I find two specimens, agreeing with the two of my note-book, and also with A. aquaticus of M. Temminck, and with a specimen, marked "Saskatchewan, Dr Richardson," of the North American bird figured and described in the Fauna Boreali-Americana under that name. These two specimens, and Dr Richardson's, are specifically identical with Alauda rufa of Wilson, and Anthus ludovicianus of Lichtenstein, of which I have examined many

specimens in Mr Audubon's collection. The specimens in the museum I had, when assistant-conservator there, marked "Anthus pratensis, near Edinburgh, August 1824." They are known by Mr Carfrae to have been prepared by his brother, who at that time preserved objects, along with Mr Wilson, for the museum. Should they be individually different from those of my note-book, we have four specimens of this species obtained in the neighbourhood of Edinburgh in the same year. The following description is taken from the prepared specimens, the colours of the bill and feet being supplied from my notes.

Bill of moderate length, straight, slender, broadish at the base, much compressed toward the end; upper mandible with its dorsal line slightly declinate at the end, the ridge narrow, the edges slightly inflected, the notches very small, the tip sharp; lower mandible with the angle long and narrow, the dorsal line ascending and straight, the tip very narrow. Nostrils oblong, small, at the lower anterior margin of the nasal membrane, which is bare anteriorly. Eyes of moderate size. Head oblong, neck short, body slender. Feet rather long, very slender; tarsus much compressed, with seven anterior scutella; the hind toe with its first joint very long, its claw moderately arched and a little longer; the anterior toes slender, compressed, the third and fourth united at the base; claws rather long, arched, extremely compressed, broadly grooved, acute. Plumage very soft and blended; wings rather long; the four outer primaries almost equal, but the first longest, the fourth shortest; the second, third, and fourth, slightly cut out on the outer web toward the end; the inner primaries and outer secondaries emarginate; the inner three tapering; tail rather long, slightly emarginate. Bill dusky brown, the basal part of the lower mandible and basal margins of the upper flesh-coloured; feet and claws purplish-brown. The general colour of the upper parts is greyish-brown, with a slight tinge of olive, the margins of the feathers on the hind part being greenish; the central part of each feather of a darker tint; a distinct yellowish-white band from the bill over the eye; quills, coverts, and tail-feathers, brown; the tips of the secondary coverts and first row of small coverts pale brownish-grey; primary quills edged with greyish-white; secondary quills and their coverts with greenish-yellow; the greater part of the outer web, and an oblique patch on the inner web of the outer tail-feather, white; the margin of the terminal half of the outer web, and a small patch at the end of the next similar. The lower parts yellowish-grey; the throat, abdomen, and

lower tail-coverts unspotted; the lower part of the neck and the breast tinged with red; the sides and lower part of the neck, the fore part of the breast, and the sides of the body, marked with oblong greyish-brown streaks.

Length to end of tail $6\frac{3}{4}$ inches, extent of wings $11\frac{3}{4}$; bill along the ridge $\frac{6\frac{1}{2}}{12}$; wing from flexure $3\frac{5}{12}$; tail $2\frac{8}{12}$; tarsus $\frac{10}{12}$; first toe $\frac{4\frac{1}{2}}{12}$, its claw $\frac{5}{12}$; second toe $\frac{4\frac{3}{4}}{12}$, its claw $\frac{2\frac{3}{4}}{12}$; third toe $\frac{7}{12}$, its claw $\frac{3}{12}$; fourth toe $\frac{5}{12}$, its claw $\frac{2\frac{1}{2}}{12}$.

Female.—The female is similar, but with the white of the lateral tail-feathers more tinged with grey, and of less extent.

Compared with Anthus obscurus, this species is more slender, its bill narrower and somewhat shorter, the tarsi and toes not nearly so stout, the hind claw more slender, and somewhat more arched; the colour of the upper parts more grey, the lateral tail-feathers with much more white; the lower parts entirely different in tint, the spots being besides more distinct and narrower in the present, which has also a pale band from the bill to behind the eye, whereas the other has only a faint yellowish band behind the eye. It has a greater resemblance to Anthus pratensis, from which it differs in being larger, in having the bill stouter, the tarsus longer, the hind claw shorter and more curved, the feet darker, the lower parts much more rufous; but the lateral tail-feathers are similarly coloured, and in some individuals the tints of the upper parts scarcely differ. Compared with a specimen from Dr Richardson, marked "Saskatchewan, No. 58," these specimens differ only in having less red on the breast, and the bill slightly longer. In short, our two birds seem to be specifically identical with it, and their description will be found to agree perfectly with that taken by me from American specimens in Mr Audubon's Synopsis.

It is probable that this species will be found not uncommon in the hilly and mountainous parts of Scotland.

Lark from Pennsylvania, Edwards, Gleanings, ii. 185, Pl. 297.—Alauda pennsylvanica, Briss. Ornith. suppl. 95.—Alauda spinoletta, Linn. Syst. Nat. i. 288.—Alauda ludoviciana, Gmel. Syst. Nat. i. 793.—Alauda rubra, Gmel. Syst. Nat. i. 794.—Alauda campestris, B. Lath. Ind. Ornith. ii. 495.—Alauda ludoviciana, Lath. Ind. Ornith. ii. 494.—Alauda rubra, Lath. Ind. Ornith. ii. 494.—Alauda rufa, Wils. Amer. Ornith. v. 89.—Anthus spinoletta, Bonap. Synops. of Birds of Amer. 90.—Anthus aquaticus, Richards and Swains, Fauna Bor. Amer. ii. 231, Pl. 44.—Anthus ludovicianus, Bonap. List of Birds of Eur. and N. Amer. 18.—Anthus ludovicia-

nus, Audub. Synops. 94.—Anthus aquaticus, Bechst, Temm. Man. d'Ornith. iv. 623.

102. Anthus Richardi. Richard's Pipit.

Upper parts olivaceous-brown, spotted with dark brown; lower parts dull white, the fore part of the neck beneath and a portion of the breast and sides tinged with reddish-yellow, and marked with oblong dusky spots; a line of similar spots from the base of the bill; two outer tail-feathers white, with a portion of the inner web brown; tarsi long; hind claw much longer than the first joint of the toe, and nearly straight.

Male, $6\frac{3}{4}$, . ., $3\frac{5}{8}$.

This species, which is about the size of Anthus obscurus, from which it is distinguished by its different colours, as well as its more elongated tarsi, and hind claws, has occurred in England only in a very few instances. It was first made known as a British bird by Mr Vigors, who described and figured a young individual caught near London in October 1812. That acute ornithologist places it in a genus apart, to which he gives the name of *Corydalla*.

Anthus Richardi, Temm. Man. d'Ornith. i. 263; iii. 185.—Anthus Richardi, Richard's Pipit, MacGillivray, Brit. Birds, ii. 199.

GENUS LIV. ALAUDA. LARK.

Bill short, straight, somewhat conical, slightly compressed; upper mandible with the dorsal line declinate and slightly convex, the ridge narrow, the sides convex, the edges sharp, without notch, the tip rather acute; lower mandible with the angle rather narrow, the dorsal line ascending and very slightly convex, the edges direct, the tip rather acute; gape-line straight. Mouth rather narrow; tongue of moderate length, narrow, emarginate and papillate at the base, thin-edged, the tip slit, terminated by two small bristly tufts; œsophagus of moderate width, nearly uniform; proventriculus oblong; stomach a remarkably powerful gizzard, roundish, somewhat compressed, with very large muscles, and dense epithelium, which is smooth and thickened opposite the muscles; intestine of moderate length; cœca very small and cylindrical. Nostrils elliptical, basal, in the fore and lower part of the broad nasal membrane. Eyes of moderate size.

Ear large, roundish. Head oblong, of moderate size; neck rather short; body rather full. Feet of ordinary length; tarsus slender, compressed, with eight or nine anterior scutella; toes five, slender, the first stout, the second slightly longer than the fourth; the hind claw extremely long, being about double the length of the first joint, very slightly arched, much compressed, slender, acute. Plumage ordinary; feathers on the upper part of the head rather long; bristles at the base of the bill; wings long, broad, of eighteen quills, the first minute, the next three longest; the inner secondaries elongated; tail rather long, straight, deeply emarginate.

The genus Alauda, most intimately allied to Anthus, passes into Plectrophanes, which belongs to the Buntings, and has various other affinities. The Larks are generally distributed on the Old Continent, and one species occurs in the northern parts of both. They prefer open places, search the fields and pastures for worms, larvæ, insects, and seeds. In winter they are chiefly granivorous, and their gizzard is more muscular than that of any other birds of the order to which they belong. They nestle on the ground, lay from four to six spotted eggs, and feed their young with worms and insects. Some of the species are remarkable for the variety of their notes and the prolongation of their song. Three species occur with us, but of these one is merely a straggler.

103. Alauda arvensis. Sky Lark.

Upper parts light reddish-brown, streaked with blackish-brown; fore neck light reddish-brown, spotted with brownish-black, the sides streaked, the rest of the lower parts dull white; an obscure brownish-white band over the eye; the first quill extremely small and acute, the second longest; quills chocolate-brown, tail-feathers darker, the outer with most of its outer web and an oblique portion of the inner white, as is the greater part of the outer web of the next. Young with all the feathers of the upper parts dusky, tipped and margined with light yellowish-grey.

Male, $7\frac{1}{12}$, $14\frac{3}{4}$, $4\frac{10}{12}$, $\frac{6}{12}$, 1, $\frac{8}{12}$, $\frac{4}{12}$. Female, $6\frac{10}{12}$, 13.

Perhaps none of our native birds has attracted more notice than the Sky Lark, on account of its being generally distributed, and rendering itself conspicuous by its habit of rising, with a fluttering and somewhat spiral motion, to a great height in the air while performing its delightful song, which is protracted

beyond that of any bird known. The nest is formed in a hollow scraped in the ground, among corn, in a hay field, or in an open pasture, and is composed of withered grass, rather loosely put together, and lined with finer fibres. The eggs, four or five, vary much in size and colour, but are generally ten and a half twelfths long, eight and a half twelfths in breadth, greenish-grey, freckled with greyish-brown. Toward the end of autumn Larks congregate, often in very large flocks, and search the stubble fields for seeds of various kinds, on which chiefly they feed during the winter. In February or March these flocks break up. Vast numbers are sent to our markets in winter, this species forming an esteemed article of food. An outcry has been raised against shooting Blackbirds and Thrushes, it being alleged that their musical faculties ought to exempt them from persecution. If so, why should not the Lark be protected, and its devourers held as barbarians?

Common Lark. Field Lark. Laverock.

Alauda arvensis, Linn. Syst. Nat. i. 287.—Alauda arvensis, Temm. Man. d'Ornith. i. 231.—Alauda arvensis, Sky-Lark, MacGillivray, Brit. Birds, ii. 163.

104. Alauda arborea. Wood Lark.

Upper parts light reddish-brown, streaked with brownish-black; the fore neck reddish-white, streaked with brownish-black, the sides light brown, the rest of the lower parts yellowish-white; a distinct yellowish-white band over the eye, continuous with a patch of the same on the nape; the first quill minute, the fourth longest. Young with the upper parts yellowish-brown, the feathers with a longitudinal dusky band; lower parts pale greyish-yellow, sides and fore part of neck with angular dusky spots; part of the breast tinged with yellowish-red.

Male, $6\frac{8}{12}$, $12\frac{1}{2}$, $3\frac{10}{12}$, $\frac{6}{12}$, $\frac{10}{12}$, $\frac{6}{12}$, $\frac{4}{12}$. Female, 6, 12.

The Wood-Lark, which is considerably smaller than the Sky-Lark, and distinguished from it chiefly by having a whitish band surrounding the upper part of the head, and much enlarged on the nape, is not uncommon in the southern, western, and midland districts of England, but of very rare occurrence in the northern. It does not clearly appear that it has been met with in Scotland; but it is partially distributed in Ireland. Its habits are similar to those of the last species, which it is said to excel in the melody of its song. It frequently perches on trees and bushes, which the other very

rarely does. The nest is placed on the ground among grass or corn, and is composed externally of dry grass, and lined with finer blades intermixed with hair. The eggs, four or five, are nine-twelfths long, seven-twelfths in breadth, pale yellowish-brown, freckled with umber or greyish-brown.

Alauda arborea, Linn. Syst. Nat. i. 297.—Alauda arborea, Temm. Man. d'Ornith. i. 282.—Alauda arborea, Wood-Lark, MacGillivray, Brit. Birds, ii. 174.

105. Alauda alpestris. Shore Lark.

Male in winter with the upper parts pale brownish-red, streaked with dark brown; the lower parts white; a recurved band on the head, a band from the bill to the eye, and a large patch on the fore neck black, but the feathers tipped with reddish-white; the throat and a band over the eyes yellow. Male in summer with the bands on the head and neck pure black; the throat and band over the eyes white. Female with the upper parts as in the male, the lower greyish-white.

Male, $7\frac{1}{2}$, $13\frac{3}{4}$, $4\frac{7}{12}$, $\frac{7}{12}$, $\frac{11}{12}$, $\frac{7}{12}$, $\frac{4}{12}$. Female, $7\frac{1}{4}$.

An individual was shot near Sherringham in Norfolk, in March 1830; another was killed in Lincolnshire; and Mr Yarrell makes mention of a pair that were obtained together on an extensive down in Kent. This species occurs in the northern parts of Europe, Asia, and America, migrating into the temperate regions in autumn.

Horned Lark.

Alauda alpestris, Linn. Syst. Nat. i. 289.—Alauda alpestris, Temm. Man. d'Ornith. i. 279.—Alauda alpestris, Shore-Lark, MacGillivray, Brit. Birds, ii. 159.

FAMILY XXI. PARINÆ. PARINE BIRDS OR TITS.

The Tits are small birds, somewhat allied to the Reguli, as well as to the Garruli, although, from their diminutive size, they seem at first sight to have little affinity to the latter. Their general form is moderately full; their head large, broadly ovate, and convex. Bill short, straight, tapering, hard, with its outlines more or less convex, the mandible thin-edged, and rather obtuse, the upper destitute of notch. The tongue is short, narrow,

with the tip abrupt and furnished with four bristles; the œsophagus narrow, without crop; the stomach roundish, somewhat compressed, its lateral muscles moderate, its epithelium dense and rugous; intestine short, of moderate width; cœca small and cylindrical. Trachea with four inferior laryngeal muscles. Nostrils rather small, roundish, and concealed by reversed bristly feathers. Eyes of moderate size. Aperture of ear large and roundish. Tarsus of moderate length, rather stout, and distinctly scutellate; toes large, especially the first, the anterior united as far as their second joint, the outer considerably longer than the inner; claws strong, compressed, arched, acute. Plumage soft, loose, and full; wings rather short, concave, rounded; tail more or less arched, always narrow, and of twelve feathers.

The Parinæ inhabit forests, woods, and thickets, where they search for insects and larvæ among the foliage, and in the crevices of the bark, clinging to the twigs, and using every possible variety of attitude. They also feed in part on small seeds, sometimes even on flesh, suet, and various other substances. They advance on the ground by hopping, have a rapid, undulated flight, are bold and courageous, especially in defence of their nests, which are large, formed of moss and lichens, and lined with feathers. The eggs are generally numerous, whitish, with brown or red spots. Species occur on both continents, and of the six that inhabit the British Isles none are migratory.

GENUS LV. PARUS. TIT.

Bill short, straight, somewhat conical, strong, compressed; upper mandible with the dorsal line convex and declinate, the edges with a slight festoon near the base, but without notch, the point thin-edged, rather blunt when viewed vertically; lower mandible with the angle short, the dorsal line ascending, and more convex than the upper, the edges a little inflected, the tip rather acute; gape-line straight. Mouth very narrow; upper mandible with three prominent lines;

tongue short, narrow, abrupt at the end, with four bristles; œsophagus of uniform and moderate width; stomach a moderately strong gizzard, elliptical, with the muscles and tendons rather large, the epithelium longitudinally rugous; intestine short, rather wide; cœca very small and cylindrical; rectum moderately enlarged toward the end. Nostrils small, roundish, in the fore part of the short nasal membrane, and concealed by reversed stiffish bristle-tipped feathers. Eyes small, eyelids feathered. Aperture of ear large and roundish. Feet of ordinary length, rather strong; tarsus compressed, with seven very broad anterior scutella; toes rather large, the first proportionally very stout, the anterior united at the base, the second considerably shorter than the fourth; claws long, much arched, extremely compressed, laterally grooved, high, and tapering to an extremely acute point. Plumage extremely soft, loose, and blended; the feathers on the upper part of the head compact and glossy; no distinct bristles; wings rather short, concave, very broad, rounded, with nineteen quills, the first very short, the fourth and fifth longest; tail of moderate length, or rather long, narrow, even or a little emarginate.

The Tits are all of very small size, the largest not exceeding a House Sparrow in bulk, and some not more than four inches in length. Although essentially insectivorous, they also feed on seeds, occasionally flesh, and various other articles. In severe weather they frequent the neighbourhood of houses, but their favourite haunts are woods and thickets. They are extremely active and bold, have a rapid flight, utter various shrill cries, nestle in holes, in walls, or trees, on branches, or in cavities in the ground, and lay numerous eggs of a white colour, dotted with red or brown. They are not only social among themselves, but frequently mix with Kinglets, Creepers, and Nuthatches.

106. Parus Fringillago. Ox-eye Tit.

The head, fore part of the neck, a transverse band on its sides, and a longitudinal band on the breast and abdomen, black glossed with blue; cheeks and part of the nape white; back yellowish-green; breast and sides yellow. Young simi-

lar to the adult, but with the tints much duller, and the dark medial band on the breast less extended.

Male, $6\frac{1}{4}$, 10, 3, $\frac{5}{12}$, $\frac{11}{12}$, $\frac{6}{12}$, $\frac{4}{12}$. Female, $6\frac{1}{12}$, $9\frac{10}{12}$,

This species, which is less gregarious than the rest, is generally distributed in the wooded and cultivated districts. It frequents woods, thickets, and occasionally gardens; feeds on insects, pupæ, larvæ, seeds, and buds; is extremely active; and in spring and summer is remarkable for its curious song, which resembles the sounds produced by sharpening the teeth of a saw. It sometimes feeds on flesh, and is said to attack small or young birds, splitting their skull with its bill. When wounded and laid hold of, it bites most vigorously; and should its nest be attacked by other birds, it defends it with great energy. It is usually placed in the hole of a wall; or in one formed expressly in the wood of a decayed tree, and is composed of moss, leaves, shreds of bark, wool, hair, and feathers. The eggs, about six, are nine-twelfths long, seven-twelfths in breadth, bluish-white, dotted with red.

The reason why I have adopted one of the old names given to this species is, that relative terms applied to birds at a time when all the species of a genus are not known, ultimately turn out incorrect. Thus, the present species is not the largest known, and therefore cannot with truth be named *major*; Picus *major* and Picus *minor* of authors are greatly excelled, either way, by many woodpeckers.

Great Titmouse. Great Black-headed Tom Tit. Black-cap. Ox-eye.

Parus major, Linn. Syst. Nat. i. 341.—Parus major, Temm. Man. d'Ornith. i. 287.—Parus Fringillago, Ox-eye Tit, MacGillivray, Brit. Birds, 425.

107. Parus cœruleus. Blue Tit.

Upper part of the head light blue encircled with white; a line of dusky blue from the bill to the eye, another from the eye to the occiput, where it meets a band of dark blue encircling the neck, throat blackish-blue, cheeks white; back light yellowish-green, lower parts pale greyish-yellow, the middle of the breast dull blue. Female much less brightly coloured. Young with the colours similarly distributed, but much paler.

Male, $4\frac{3}{4}$, $7\frac{3}{4}$, $2\frac{1}{2}$, $\frac{3}{12}$, $\frac{9}{12}$, $\frac{11}{24}$, $\frac{3}{12}$. Female, $4\frac{7}{12}$, $7\frac{1}{2}$.

This beautiful and lively species is very common in most districts, frequenting gardens, orchards, and woods, feeding on insects, larvæ, seeds, and various other substances. In winter it is often seen about farm-yards, doors, and dunghills,

where it picks grain, other farinaceous matters, suet or flesh, and in spring commits havoc among the buds, probably in search of insects. The nest, which is placed in the chink of a wall, or under the eaves or thatch, or in a hole in a tree, is composed of moss, grass, and wool, and lined with hair and feathers. The eggs, from six to ten or more, are seven and a half twelfths long, six-twelfths in breadth, reddish-white, irregularly spotted with light red. This species is often found in winter traversing the woods in company with the Coal-Tit and Golden-crested Kinglet. It clings to the twigs in all sorts of attitudes, has a direct rapid flight, and in spring a variety of notes, of which the most common resemble the syllables chicka, chicka, chicka, chee, chee.

Blue Titmouse. Blue-cap. Blue-bonnet. Tom-tit. Hickwall. Billy-biter. Ox-eye.

Parus cœruleus, Linn. Syst. Nat. i. 341.—Parus cœruleus, Temm. Man. d'Ornith. i. 289.—Parus cœruleus, Blue Tit, MacGillivray, Brit. Birds, ii. 431.

108. Parus ater. Coal Tit.

Head and neck glossy bluish-black, with a broad patch of white on the cheek and side of the neck, and a large white spot on the nape; back grey, breast white, hind parts brownish-yellow; two white bars on the wing, formed by the tips of the secondary coverts, and first rows of small coverts. Young similar, but with the tints duller.

Male, $4\frac{1}{4}$, $7\frac{4}{12}$, $2\frac{4}{12}$, $\frac{4}{12}$, $\frac{8}{12}$, $\frac{5}{12}$, $\frac{3}{12}$. Female, $4\frac{1}{4}$, $7\frac{3}{12}$.

The favourite abode of this species is in forests and plantations of fir and pine, where it wanders about in troops, often composed of a vast number of individuals, and usually associating with the Gold-crowned Kinglet, Long-tailed Mufflin, and Blue Tit. But although partial to fir woods, it also frequents those of birch, oak, and alder. Its flight is short and even, its cry a sharp cheeping note, and in searching for its insect food, it exhibits the greatest activity, clinging to the twigs in every kind of position. Its nest, which is placed in a hole, or crevice in a wall or decayed tree, is composed of moss intermixed with hair, and lined with wool and hair. The eggs, from five to eight, are seven-twelfths long, nearly six-twelfths in breadth, white, with light red spots and dots.

Cole Tit. Coal Titmouse. Blackcap.

Parus ater, Linn. Syst. Nat. i. 341. Parus ater, Temm. Man. d'Ornith. i. 288.—Parus ater, Coal Tit, MacGillivray, Brit. Birds, ii. 440.

109. Parus palustris. Marsh Tit.

Head and throat brownish-black, a broad patch of greyish-white on the cheek and side of the neck; back greyish-brown, lower parts brownish-yellow. Easily distinguished from the Coal Tit by its not having any white on the nape or wing-coverts. The young differ from the adult only in having the tints duller, the upper parts more tinged with green, and the black of the head approaching to a sooty brown.

Male, $4\frac{1}{2}$, $7\frac{3}{4}$, $2\frac{5}{12}$, $\frac{9}{24}$, $\frac{10}{12}$, $\frac{9}{24}$, $\frac{3}{12}$.

This species which does not confine itself to marshy places, as its name implies, is more common in England than in Scotland. Its habits are similar to those of the last species; but in autumn and winter it feeds partly on the seeds of Syngenesian plants. The nest is placed in the hole of a decayed tree, and is composed of moss, wool, hair, and vegetable fibres, and lined with the down of willows and other plants. The eggs, from six to eight, are white with red dots.

Marsh Titmouse. Black-headed Tom-tit.

Parus palustris, Linn. Syst. Nat. i. 341.—Parus palustris, Temm. Man. d'Ornith. i. 291.—Parus palustris, Marsh Tit, MacGillivray, Brit. Birds, ii. 445.

110. Parus cristatus. Crested Tit.

Occipital feathers elongated, pointed, and slightly recurved, forming a conspicuous crest; feathers of the head black, with white margins; cheeks white; space behind the eyes, a decurved band over the hind neck, and a large triangular spot on the fore neck, black; upper parts grey, tinged with yellowish-brown; breast greyish-white; sides, abdomen, and lower tail-coverts, pale yellowish-brown.

Male, $4\frac{7}{12}$, 8, $2\frac{1}{2}$, $\frac{5}{12}$, $\frac{10}{12}$, $\frac{5}{12}$, $\frac{1}{12}$. Female, $4\frac{6}{12}$, 8.

This species has hitherto been found only in the fir woods of the north of Scotland. I have seen and described two specimens shot in Strathspey by Mr Th. Macpherson Grant.

Crested Titmouse.

Parus cristatus, Linn. Syst. Nat. i. 340.—Parus cristatus, Temm. Man. d'Ornith. i. 290.—Parus cristatus, Crested Tit, MacGillivray, Brit. Birds, ii. 450.

GENUS LVI. MECISTURA. MUFFLIN.

This genus differs from Parus chiefly in the great length of the tail, and in having the tip of the upper mandible con-

siderably elongated and decurved. Bill very short, rather stout, compressed; upper mandible with its dorsal line convex, the ridge narrow, the sides convex and sloping, the edges direct, without notch or sinus, the tip acute, considerably decurved, and rather elongated; lower mandible with the angle very short, the dorsal line convex, the tip acute; gape-line a little arched. Tongue very slender, subsagittate at the base, abruptly terminated, with four bristles; œsophagus of uniform width; stomach roundish, compressed, moderately muscular, with the epithelium rugous; intestine short, and of moderate width; cœca very small; cloaca globular. Head broadly ovate, very large; neck short; body rather full. Nostrils small, round, and concealed by the feathers. Eyes small; eyelids with very broad, crenate, bare margins. Feet of ordinary length, rather slender; tarsus compressed, with seven large anterior scutella; toes rather slender, first proportionally large, anterior toes united at the base; claws long, moderately arched, extremely compressed, laterally grooved, very acute. Plumage exceedingly soft, loose, and elongated; wings of moderate length, concave, rounded; first quill small, fourth and fifth longest; tail very long, straight, graduated.

111. Mecistura longicaudata. Long-tailed Mufflin.

Tail very long; plumage extremely soft and tufty; head, throat, and breast, white; a broad band over the eye, the nape, and the back, black; scapulars reddish; tail black, the three lateral feathers on each side externally white. Young duller, without red on the scapulars.

Male, $5\frac{10}{12}$, $6\frac{9}{12}$, $2\frac{5}{12}$, $\frac{3}{12}$, $\frac{15}{24}$, $\frac{4}{12}$, $\frac{2}{12}$.

This singular looking bird, the most diminutive of our British species except the Kinglets, is generally distributed in the wooded and cultivated districts. Its habits are similar to those of the Tits, with which it occasionally associates; but it differs from them in attaching to the branches its nest, which is of an oblong form, composed of moss and lichens, lined with feathers, and having a small aperture near the top. The eggs are numerous, next in size to those of Regulus auricapillus. being from six to seven-twelfths long, and about five-twelfths in breadth, white, generally marked with numerous faint red dots at the larger end. I have seen a nest in which were sixteen young ones.

Bottle Tom. Bottle Tit. Long-tailed Mag. Huck-muck. Poke-pudding. Mum-ruffin.

Parus caudatus, Linn. Syst. Nat. i. 342.—Parus caudatus, Temm. Man. d'Ornith. i. 296.—Mecistura longicaudata, Long-tailed Mufflin, MacGillivray, Brit. Birds, ii. 454.

FAMILY XXII. AMPELINÆ. AMPELINE BIRDS, OR CHATTERERS.

The family of Piprinæ, of which we have no representatives in Britain, is closely allied to that of Parinæ on the one hand, and on the other to the Ampelinæ, of which only a single species occurs accidentally with us.

In their general form the Ampelinæ are rather full and compact, with the neck short, the head oblong, and of moderate size. Bill shorter than the head, broad at the base, and having a triangular form when viewed from above; upper mandible with the dorsal line decurved, the ridge narrow, the edges direct, the notches small, but distinct, the tip small and deflected; lower mandible smaller, with the angle wide, the dorsal line slightly convex, the edges rather inflected, the tip very narrow. Feet small; tarsi generally short; toes small or moderate, the first strongest, and considerably larger than the lateral, of which the outer is a little longer, the soles flattened; claws of moderate size, well curved, compressed, laterally grooved, very acute. Plumage soft and blended; wings of moderate length, or rather long, with nineteen quills; tail short or moderate, of twelve feathers.

The Ampelinæ are chiefly natives of warm climates, especially of those of America. Their food consists of soft fruits and insects; but their habits are little known. From the width of their mouth and the triangular form of their bill, as well as their small feet, they might perhaps be as well referred to the Myiotherinæ as to the Cantatrices.

GENUS LVII. BOMBYCILLA. WAXWING.

Bill short, straight, broad at the base, compressed toward the end; upper mandible with the dorsal line convex, the ridge narrow, the edges sharp and overlapping, the notches distinct, the tip small, declinate, rather acute; lower mandible smaller, with the angle wide, the dorsal line convex, the edges somewhat inclinate, the tip acute, ascending, with a small sinus; gape-line straight. Tongue short, triangular, sagittate and papillate at the base, concave above, with the tip horny and deeply slit; mouth wide; œsophagus very wide, enlarged about the middle; stomach small, moderately muscular, roundish, with a dense, rugous, epithelium; intestine short, and excessively wide; cœca very small, oblong. Nostrils large, oval. Eyes of moderate size. Head ovato-oblong; neck short; body moderately full. Legs short; tarsus compressed, with seven scutella; toes of moderate size, outer slightly adherent at the base, and a little longer than the inner; claws moderate, arched, compressed, laterally grooved, acute. Plumage very soft and blended; head with a conspicuous tuft; wings rather long, pointed, the first and second quills longest; secondaries abruptly rounded, with the shaft prolonged into a narrow, oblong, coloured, horny appendage; tail of moderate length, nearly even.

The Waxwings, so named on account of the little appendages to the wings, in colour resembling red sealing-wax, belong to the arctic regions of both continents.

112. Bombycilla garrula. Black-throated Waxwing.

General colour of the plumage light greyish-brown, shaded behind into ash-grey; forehead and lower tail-coverts brownish-orange; throat and a band from the nostrils to the occiput black; primary coverts tipped with white; primaries with a yellow, secondaries with a white spot, at the end of the outer web; tail greyish-black, tipped with yellow.

Male, 9, 16, $4\frac{9}{12}$, $\frac{6}{12}$, $\frac{9}{12}$, $\frac{7}{12}$, $\frac{7}{24}$. Female, $8\frac{1}{4}$.

This beautiful bird is only an occasional or accidental visiter, appearing in winter, generally in large flocks, and feeding on the berries of the hawthorn and mountain-ash. At that season it is said to be generally dispersed over the Continent; but in summer it retires northward.

Bohemian Chatterer. European Waxwing.

Ampelis garrulus, Linn. Syst. Nat. i. 297.—Bombyciphora garrula, Temm. Man. d'Ornith. i. 124.—Bombycilla garrula, Black-throated Waxwing, MacGillivray, Brit. Birds, iii. 533.

The birds which form the next ordinal group are all very easily recognised by their stout conical bill. In the structure of their skeleton, wings, feet, and organs of sense, they differ very little from the Cantatrices and Vagatrices, which they further resemble in having four pairs of inferior laryngeal muscles. Their digestive apparatus is also similar, but with this difference that the œsophagus is dilated into a kind of crop, or rather half-crop, inclining to the right side, and sometimes curving round the neck behind. All our small Finch-like birds belong to this group, to which I have elsewhere given the name of Huskers, they being in fact, the only birds that remove the shell or husk of seeds in their bill, before swallowing them. The only word that I can find expressive of this is *Deglubitores*, to which a *candid* critic has been pleased to add another syllable, making it Deglubi*bi*tores. If the reader can find a better term, I will gladly adopt it.

ORDER VIII. DEGLUBITRICES. HUSKERS.

Connected with the Larks on the one hand, with the Starlings and Crows on the other, as well as with the Buntings and Finches, is a tribe of birds nearly peculiar to America, and bearing the name of ICTERINÆ: but of which we have no representatives in Britain. Allied to them are the EMBERIZINÆ, or Buntings, which gradually pass into the PASSERINÆ, or Sparrows; of both of which we have several species. A fourth group, the TANAGRINÆ, allied to the last, and in some respects to the Pi-

prinæ, already alluded to, presents similar general characters; but of this tribe we are entirely destitute. These birds collectively form the order above designated, of which the characters are as follows.

Bill short or moderate, conical, with the sides convex, the edges sharp and inflected, the tip acute, the upper mandible with scarcely any notch or sinus near the extremity. Tongue moderate, slender, compressed, grooved above, horny toward the end, with the tip slit; œsophagus rather wide, and on the middle of the neck dilated into a crop of moderate size, inclining to the right side; stomach a powerful gizzard, of a roundish form, compressed, with two large lateral muscles; its cuticular lining dense, tough, and longitudinally rugous; intestine short, or of moderate length; cœca very small, cylindrical, adnate; cloaca not dilated. Trachea with four pairs of inferior laryngeal muscles. Nostrils roundish at the base of the bill. Eyes of moderate size. Aperture of ear large. Feet with four toes, placed in the same plane, the first stouter, the three anterior slightly spreading; claws rather long, arched, compressed, tapering to a fine point. Wings of moderate length, rather pointed, the outer three quills longest; tail of twelve feathers.

The Deglubitrices, of which species occur in all parts of the world, live chiefly on seeds or other vegetable substances; but also partly on insects and worms. They generally advance by leaping, but a few walk in the manner of the Crows and Starlings. Their flight is rapid, light, generally undulated. Almost all of them are gregarious in winter, some at all seasons. Of the twenty-five species which occur with us, seventeen are permanently resident, all the rest winter visitants from the north, excepting one straggler from the south. Like the

Cantatrices, they form an elaborate nest, and generally lay about five eggs. The young, at first blind and naked, are fed with insects and soft food. Most of these birds have a modulated song, which, however, is much inferior to that of the Cantatrices.

FAMILY XXIII. EMBERIZINÆ. EMBERIZINE BIRDS, OR BUNTINGS.

Bill short, stout, conical, pointed; upper mandible smaller and generally narrower, with the dorsal line nearly straight, the sides convex, the edges inflected; lower with the angle short and broad, the dorsal line nearly straight, the back rounded, the edges sharp and involute; gape-line ascending obliquely for nearly half its length, then direct. Internally, the upper mandible is very narrow, with a hard, generally oblong, knob, and toward the end flat, with three prominent lines; tongue compressed, deep, with two bristly points; œsophagus dilated into a crop; proventriculus oblong; stomach a strong, roundish, compressed gizzard, with large muscles, and dense, rugous epithelium; intestine of moderate length and width; cœca very small, cylindrical, adnate. Nostrils oblong, in the lower and fore part of the short nasal depression. Eyes of moderate size, eyelids feathered. Aperture of ear rather large. Head rather large, ovate, neck short. Tarsi rather short, compressed, with seven anterior scutella; toes moderate, compressed, with long scutella; the first toe strong, the lateral nearly equal, third and fourth united at the base; claws arched, compressed, acute. Plumage generally blended, but firm; wings of ordinary length, with eighteen quills, the second and third longest; tail moderate or rather long, straight, emarginate.

The Emberizinæ, of which two genera occur with us,

have a strong, rapid, rather undulated flight; move on the ground by short leaps, frequent the open fields, retreating to trees and bushes when disturbed. The nest is rather bulky, compact, deep, and placed on the ground or in bushes. The eggs, about five, are marked with spots or lines.

GENUS LVIII. EMBERIZA. BUNTING.

Bill short, conical, strong, somewhat pentagonal at the base, compressed toward the end; upper mandible narrower, with the edges inflected, lower with the edges involute; gape-line ascending obliquely for nearly half its length. Mouth rather narrow; upper mandible internally with a sudden bend about the middle, anterior to which is a prominent knob; tongue sagittate and papillate at the base, compressed, with two short bristly points; œsophagus dilated about the middle; proventriculus oblong; gizzard roundish, compressed, with very strong lateral muscles, large tendons, and dense, rugous epithelium; intestine of moderate length and width. Nostrils oblong. Eyes of moderate size. Aperture of ear rather large. Head ovate; neck short; body moderately stout. Legs rather strong, of moderate length or rather short; tarsus compressed, with seven distinct scutella; toes moderate, compressed; claws arched, compressed, indistinctly grooved, acute. Plumage blended; wings moderate, rounded, the second and third longest; tail moderate or rather long, emarginate.

Four species of this genus occur in Britain.

113. Emberiza Miliaria. Corn Bunting.

In both sexes the upper parts light yellowish-brown, streaked with blackish-brown, each feather being of that colour along the shaft; lower parts pale yellowish-grey, each feather of the fore neck tipped with a triangular spot of brownish-black, the fore part of the breast and the sides with more elongated and fainter spots. Young similar to the adult, but with the upper parts paler, and the dark markings of the lower more elongated.

Male, $7\frac{1}{4}$, 13, 4, $\frac{11}{24}$, $\frac{11}{12}$, $\frac{10}{12}$, $\frac{7}{24}$. Female, $7\frac{1}{4}$, $12\frac{3}{4}$.

The Corn Bunting is generally distributed, permanently resident; frequents open pastures, grass and corn fields; perches on tall herbaceous plants, bushes, or trees, the male there chanting his singular song, which is a hurried repetition of short unharmonious notes, terminated by a protracted one. It feeds on seeds of grasses, polygona, rumices, cereal plants, and coleopterous insects, in winter becomes extremely fat, and as an article of food is equal to the Lark. At this season it generally forms flocks, which break up about the middle of spring. The nest, composed of dry stalks and blades of grass, with a lining of fibrous roots and hair, is placed on the ground among grass or herbage. The eggs are four or five, ten and a half twelfths long, nearly eight-twelfths in breadth, greyish-white, patched and spotted with pale greyish-purple, and marked with spots, dots, and curved lines of blackish-brown.

Bunting. Common Bunting. Sparrow.

Emberiza Miliaria, Linn. Syst. Nat. i. 308.—Emberiza Miliaria, Temm. Man. d'Ornith. i. 306.—Emberiza Miliaria, Corn Bunting, MacGillivray, Brit. Birds, i. 440.

114. Emberiza Citrinella. Yellow Bunting.

Back and wings bright red, the central part of each feather brownish-black. Male with the head and throat bright yellow, the feathers of its upper part tipped with black, the breast brownish-red. Female with the yellow of the head obscured by dusky and brown, the breast pale greyish-brown. Young dull yellowish-brown, streaked with black above, yellowish-grey beneath, the breast and sides streaked with brown.

Male, $7\frac{1}{8}$, 11, $3\frac{1}{2}$, $\frac{9}{24}$, $\frac{9}{12}$, $\frac{7}{12}$, $\frac{4}{12}$. Female, $6\frac{11}{12}$, $10\frac{3}{4}$.

This species is very widely distributed, being in most of the cultivated and wooded districts of Britain and Ireland a very common and familiar bird, and a permanent resident. In autumn it forms large straggling flocks, which through the winter often mingle with Chaffinches, Green Linnets, Sparrows, and other species, in open weather resorting to the fields, and perching at intervals in the hedges and bushes, as well as on trees. When the ground is covered with snow, they congregate about houses, and frequent corn-yards. Their flight is undulated, light, strong, and graceful, and they alight abruptly, jerking out their tail-feathers. In spring and summer the male chants a doleful sort of ditty, composed of a few short shrill notes, concluding with a protracted one. Their food consists of seeds of cereal plants, especially oats, grasses, chickweeds, polygona, and others. The nest, composed of coarse grasses

and twigs, and neatly lined with fine grass, fibrous roots, and hair, is placed on the ground or in the lower part of a bush. The eggs, four or five, are purplish-white, marked with linear and angular streaks, and a few irregular dots of black; their length about ten-twelfths, their breadth eight-twelfths.

Yellow Hammer. Yellow Yeldring or Yoldring. Yellow Yowley. Yellow Yite, Yeldrock, or Yolkring. Skite. Devil's Bird.

Emberiza Citrinella, Linn. Syst. Nat. i. 309.—Emberiza Citrinella, Temm. Man. d'Ornith. i. 304.—Emberiza Citrinella, Yellow Bunting, MacGillivray, Brit. Birds, i. 445.

115. Emberiza Cirlus. Cirl Bunting.

Male with the back and wings bright red, the central part of each feather brownish-black, the head and throat black; a band over the eye, another beneath it, and a crescent-shaped patch on the fore neck, bright yellow; lower part of neck all round dull green; fore part of breast and sides yellowish-red, the rest yellow. Female with the head greenish-brown streaked with black, the upper parts as in the male, the lower yellowish, the breast and sides streaked with brown.

Male, $6\frac{3}{4}$, .., $3\frac{1}{4}$, $\frac{4}{12}$, $\frac{7}{12}$, $\frac{8}{12}$, $\frac{3}{12}$. Female, $6\frac{1}{2}$.

The Cirl Bunting was first described as British by Montagu, and has repeatedly been found in the southern counties of England, where it is permanently resident. It is said to inhabit the southern parts of the European Continent, and not to migrate northward. Its habits are similar to those of the Yellow Bunting, and the male has a shrill piercing song of the same nature. In England, the nest, generally placed in furze, or some other low bush, is composed of dry stalks, roots, and a little moss, and lined with long hair and fibrous roots. The eggs, four or five, are greyish-white, with irregular dusky lines.

Emberiza Cirlus, Linn. Syst. i. 311.—Emberiza Cirlus, Temm. Man. d'Ornith. i. 313.—Emberiza Cirlus, Cirl Bunting, MacGillivray, Brit. Birds, i. 450.

116. Emberiza hortulana. Ortolan Bunting.

Head and neck greenish-grey, spotted with dusky; throat, space around the eye, and a band from the bill downwards, yellow; upper parts reddish-grey, with black spots; lower part of neck, breast, and abdomen brownish-red, the feathers tipped with grey. Female with the band over the eyes and

the throat pale yellow, the breast marked with dark-brown spots, the rest of the lower parts whitish-red.

Male, $6\frac{1}{2}$, 10, $3\frac{7}{12}$, $\frac{5}{12}$, $\frac{9}{12}$, $\frac{7}{12}$, $\frac{3}{12}$.

A few individuals of this species have occurred in England. The first recorded was caught near London; one was taken at sea, off the coast of Yorkshire, in May 1822; a male was killed near Manchester in November 1827, and in the same year another male was caught near London. This species, which is common in the southern countries of Europe, migrates northward as far as the Baltic, although with us it occurs merely as a straggler.

Emberiza Hortulana, Linn. Syst. Nat. i. 309.—Emberiza Hortulana, Temm. Man. d'Ornith. i. 311.—Emberiza Hortulana, Ortolan Bunting, MacGillivray, Brit. Birds, i. 457.

117. Emberiza Schœniclus. Reed Bunting.

Male with the head and throat black; a line from the lower mandible down the neck, a broad band over the back of the neck, and the lower parts white; the back bright chestnut, each feather brownish-black in the middle. Female with the upper parts as in the male, but paler; a band of yellowish-grey across the neck; the head of the same colour as the back; the lower parts greyish-white. Young similar to the adult female, but with duller tints, and the cheeks brownish-grey.

Male, $6\frac{1}{4}$, $9\frac{3}{4}$, $3\frac{2}{12}$, $\frac{4}{12}$, $\frac{9}{12}$, $\frac{6}{12}$, $\frac{3}{12}$. Female, $5\frac{1}{2}$, 9.

This species frequents marshy places, where it is seen perching on willows, reeds, sedges, and other aquatic plants. Its flight is rapid and undulatory, and it alights abruptly, expanding its tail, when the white of that part becomes conspicuous. Its food consists of seeds, insects, and small mollusca. Its song resembles that of the Yellow Bunting, but is less harsh. The nest, which is placed among aquatic plants, is composed of stalks and blades of grasses, bits of rushes and the like, with a neat lining of finer grass and hair. The eggs, four or five, are nine and a half twelfths long, seven and a half twelfths broad, yellowish-grey, with tortuous or angular lines and irregular spots of black.

Black-headed Bunting. Reed Sparrow. Water Sparrow. Ring Bunting. Ring-bird. Ring-fowl. Chink.

Emberiza Schœniclus, Linn. Syst. Nat. i. 311.—Emberiza Schœniculus, Temm. Man. d'Ornith. i. 307.—Emberiza Schœniculus, Reed Bunting, MacGillivray, Brit. Birds, i. 453.

GENUS LIX. PLECTROPHANES. LARK-BUNTING.

Bill short, strong, somewhat pentagonal at the base, conical, somewhat compressed toward the end; upper mandible narrower, with the dorsal line slightly convex, the sides convex, the edges slightly inflected, the tip direct; lower mandible with the dorsal line slightly convex, the back and sides rounded, the edges involute; gape-line ascending obliquely, then direct. Mouth rather narrow; upper mandible internally with a sudden bend about the middle, anterior to which is a narrow knob, with three prominent lines; tongue sagittate and papillate at the base, fleshy, compressed, and terminating in two short, bristly points; œsophagus dilated about the middle; proventriculus oblong; stomach roundish, compressed, with very strong lateral muscles, and dense, rugous epithelium; intestine of moderate length and width; cœca very small. Nostrils oblong. Eyes of moderate size. Head ovate; neck short; body moderate. Legs rather short; tarsus compressed, with seven anterior scutella; toes moderate, the lateral equal, the first large; claws long, slightly arched, compressed, laterally grooved, pointed; that of the hind toe longer than the first joint. Plumage blended; wings long, acute, with eighteen quills, of which the first is longest; tail rather long, emarginate.

The upper mandible is broader than in Emberiza, the knob on the palate less elevated, the wings longer and more pointed, and the hind claw proportionally more elongated. Two species of this genus occur in Britain; both winter visitants, one common, the other rare; but it appears that some individuals of one of them remain to breed in the mountainous districts of Scotland.

118. Plectrophanes nivalis. Snow Lark-Bunting. 1:1:81

Male in winter, with the upper part of the head, cheeks, and a band on the lower neck light reddish-brown; lower parts white; upper black, the feathers edged with yellowish-brown; a patch of white on the wing, including the smaller coverts, and some of the secondary coverts and secondary quills; the

three outer tail-feathers nearly white. Female in winter similar to the male, but darker, and with more reddish-brown on the head and breast, and less white on the wings. Male in summer, with the head, neck, lower parts, and a patch on the wings pure white, the rest black. Female in summer with the same parts white, but the head, cheeks, and a band on the neck tinged with reddish; the black feathers of the upper parts edged with reddish-white. Young male and female in winter, with the head dark reddish-brown, the upper parts yellowish-brown spotted with brownish-black, the lower parts dull white, the fore-neck, breast, and sides tinged with reddish-brown; the male with the small wing-coverts reddish-white, while in the female they are dusky.

Male, $6\frac{7}{12}$, 13, $4\frac{5}{12}$, $\frac{5}{12}$, $\frac{19}{24}$, $\frac{7}{12}$, $\frac{9}{24}$. Female, $6\frac{1}{4}$, $12\frac{1}{4}$.

The Snowflakes arrive in the end of September and beginning of October, and extend from the north of Scotland to the south of England, remaining until the end of Spring, when they return to the Arctic regions. It is probable, however, that some breed in the Grampians, as I have seen in the beginning of August several individuals there, and a family of eight individuals on Loch-na-gar. In winter they frequent the shores of the sea and their vicinity, and in fine weather betake themselves to the interior. They fly somewhat in the manner of Larks, run with great celerity, feed on seeds of various kinds, and insects or pupæ.

Snow Bunting. Snowflake. Snow-fowl. Oat-fowl.

Emberiza nivalis, Linn. Syst. Nat. i. 308.—Emberiza nivalis, Temm. Man. d'Ornith. i. 319.—Plectrophanes nivalis, Snow Lark-Bunting, or Snowflake, MacGillivray, Brit. Birds, i. 460.

119. Plectrophanes lapponica. Lapland Lark-Bunting.

Male in winter with the top of the head black spotted with red, the fore part of the neck greyish-white spotted with black, the wings with two transverse white bands. Female with the top of the head reddish-grey, spotted with black; the throat white; the breast grey, spotted with black. Male in summer with the top of the head, the cheeks, fore neck, and part of the breast pure black, the lower parts white.

Male, $6\frac{9}{12}$, . ., $3\frac{10}{12}$, $\frac{6}{12}$, . . , $\frac{15}{24}$, $\frac{7}{24}$.

This species, which, like the last, inhabits the northern regions of both continents, migrating in autumn into the temperate parts, is of very rare occurrence in Britain. The first

recorded was obtained in Leadenhall market among larks that had been sent from Cambridgeshire; the second was caught near Brighton; the third was taken near London in 1828; the fourth in 1833, near Preston. In its winter flights it often associates with Larks. According to Dr Richardson it feeds on the seeds of various plants, breeds in marshy places or moist meadows, forms its nest of dry stalks of grass, lining it with hair or feathers, and lays six or seven eggs, of a yellowish colour, spotted with brown.

Lapland Finch.

Fringilla lapponica, Linn. Syst. Nat. i. 317.—Emberiza calcarata, Temm. Man. d'Ornith. i. 322.—Plectrophanes lapponica, Lapland Lark-Bunting, MacGillivray, Brit. Birds, i. 469.

FAMILY XXIV. PASSERINÆ. PASSERINE BIRDS, OR SPARROWS.

The Passerinæ differ little from the Emberizinæ, unless in the form of the bill, and in having the upper mandible broad and concave, in place of being narrow and furnished with a prominent knob. The two families pass insensibly into each other by means of exotic species, although the gradations are not exhibited by the few that occur in Britain. The Passerinæ are all of small size, with the body compact, the neck short, the head large. Bill short, stout, conical, with the sides convex; upper mandible of about the same breadth as the lower, with the dorsal outline straight or convex, the edges overlapping, with a slight sinus near the tip, which is sharp and slightly deflected; lower mandible with the angle short and rounded, the dorsal line straight or slightly convex, the edges inflected, the tip acute. Both mandibles internally concave, the upper generally with three longitudinal elevated lines; tongue sagittate at the base, very narrow, involute, with the tip horny and bifid, or terminated by a pencil of short bristles; œsophagus dilated on the middle of the neck into a crop lying on the left side; proventriculus oblong; stomach roundish, with strong

lateral muscles, radiated tendons, and dense rugous epithelium; intestine of moderate length and width; cœca small, cylindrical, adnate. Eyes of moderate size, eyelids feathered. Nostrils nearly circular, basal, in the fore part of the nasal depression, which is short and broad. Aperture of ear large, elliptical. Legs short; tarsus compressed, with about seven anterior scutella, thin-edged behind, with two longitudinal plates; toes slender, compressed, the second and fourth shortest and equal, first stouter, third and fourth united at the base; claws rather long, slender, arcuate, compressed, laterally grooved, acute. Plumage soft and blended; wings of moderate length, with seventeen quills, the three outer longest; tail moderate, of twelve feathers, of which the lateral are slightly bent outwards.

The Passerinæ, like the Emberizinæ, are for the most part granivorous; but they also eat soft fruits, leaves of plants, and insects. They are active and lively, in winter generally gregarious; have a strong, rapid, and undulated flight; glide among the branches with ease, on the ground always move by short leaps; frequent the open fields in search of food, retreating to trees and bushes when disturbed, and settling there at night. They form an elaborate nest, and lay from four to eight spotted eggs. Of these birds, which for the most part are numerous and generally distributed over the country, we have eighteen species.

GENUS LX. FRINGILLA. FINCH.

Bill shortish, straight, direct, conical, acute; upper mandible with the dorsal line declinate and straight to near the end, when it becomes a little convex, the ridge broad and convex, the sides rounded, the edges inflected but overlapping, with an obsolete notch or sinus close to the tip; lower mandible with the angle short, broad, and rounded, the dorsal line very slightly convex, the ridge broad, the sides

rounded, the edges inflected; gape-line straight. Mouth rather narrow, both mandibles deeply concave; tongue sagittate, subulato-lanceolate, involute so as to be nearly tubular, the tip terminated by a pencil of short bristles; œsophagus dilated into a large crop; proventriculus bulbiform; gizzard roundish, compressed, with very strong lateral muscles and radiated tendons; its cuticular lining dense, and longitudinally rugous; intestine of moderate length, rather wide; cœca very small, cylindrical. Nostrils nearly circular, basal, concealed by the reflected feathers. Eyes of moderate size. Head oblong, moderate; neck short; body compact. Legs short; tarsus compressed, with seven anterior scutella; toes slender, compressed; claws rather long, slender, arcuate, compressed, laterally grooved, acute. Plumage soft and blended; wings broad, with the outer four quills nearly equal, but the second and third longest; tail rather long or moderate, emarginate.

120. Fringilla cœlebs. Chaffinch.

Male with the upper part of the head and the hind neck greyish-blue; a black band on the forehead; the back reddish-brown, the rump yellowish-green; the fore neck and breast purplish-red. Female with the upper part of the head and the back light greyish-brown, the rump yellowish-green, the breast pale yellowish-grey. Young similar to the female, but with the tints paler. Few birds exhibit the effects of the wearing of the feathers in a more remarkable manner than the male Chaffinch, which in the breeding season has the black of the forehead, and the greyish-blue of the head, unmixed, the red of the back brighter, and the breast of a much lighter tint. The bill, which in winter is pale reddish-brown, also becomes of a fine leaden blue.

Male, $6\frac{1}{2}$, $11\frac{1}{2}$, $3\frac{3}{4}$, $\frac{5}{12}$, $\frac{3}{4}$, $\frac{7}{12}$, $\frac{7}{24}$. Female, $6\frac{1}{4}$, 10.

This species is of very common occurrence in all the wooded and cultivated parts of the country. Toward the end of autumn it forms flocks, which betake themselves to the neighbourhood of houses, searching for food by the hedges, in gardens, farm-yards, and fields, and associating with Greenfinches, Yellow Buntings, Sparrows, and Linnets. In winter it feeds chiefly on seeds, but in summer on insects and larvæ. It has a rapid and undulated flight, alights abruptly, walks by short leaps, and is among the most familiar of our birds. Its song

is short, modulated, and mellow, but apt to become tiresome from being incessantly repeated. The nest, which is very neatly constructed of moss, lichens, grass, and other materials, with a lining of wool, hair, and feathers, is usually placed on a tree, or shrub. The eggs, four or five, are oval, nine-twelfths long, six and a half twelfths broad, purplish-white, or pale reddish-grey, sparsely spotted with reddish-brown, and having a few irregular lines of the same. Two broods are reared.

Pink. Spink. Twink. Shilfa. Shelly. Shell-apple. Chaffy. Boldie. Beech Finch. Horse-dung Finch.

Fringilla cœlebs, Linn. Syst. Nat. i. 318.—Fringilla cœlebs, Temm. Man. d'Ornith. i. 357.—Fringilla cœlebs, Chaffinch, MacGillivray, Brit. Birds, i. 329.

121. Fringilla Montifringilla. Mountain Finch, or Brambling.

Male with the head and back deep black, the feathers margined with yellowish-grey; rump white, tinged with yellow; fore neck and breast light reddish-brown, sides spotted with black. Female with the head and back pale greyish-red, the central part of each feather brownish-black; rump greyish-white; breast pale reddish-brown.

Male, $6\frac{1}{4}$, $10\frac{1}{2}$, $3\frac{3}{4}$, $\frac{6}{12}$, $\frac{7}{8}$, $\frac{7}{12}$, $\frac{4}{12}$. Female, 6, 10.

This species, which is very nearly allied to the Chaffinch in its general form and style of colouring, as well as its habits, is very liable to be confounded with that bird, when seen at some distance. It is a winter visitant from the northern regions, and has been met with in most parts of Scotland and England.

Bramble Finch.

Fringilla Montifringilla, Linn. Syst. Nat. i. 318.—Fringilla Montifringilla, Temm. Man. d'Ornith. i. 360.—Fringilla Montifringilla, Mountain Finch or Brambling, MacGillivray, Brit. Birds, i. 335.

GENUS LXI. CARDUELIS. THISTLE-FINCH.

Bill shortish, straight, strong, conical, higher than broad in its whole length, tapering to a very slender point; upper mandible with the dorsal line nearly straight, the ridge narrow, the sides slightly convex, the edges direct, destitute of notch, the tip extended considerably beyond that of the lower mandible, of which the angle is semicircular, the dorsal line

straight, or slightly concave, the ridge narrowed toward the end; gape-line nearly straight. Mouth narrow; both mandibles deeply concave within; tongue sagittate, subulate, involute, the tip terminated by a pencil of short bristles; œsophagus dilated into a crop; proventriculus bulbiform; stomach roundish, compressed, with very strong, lateral muscles, radiated tendons, and dense, longitudinally rugous epithelium; intestine of moderate length, rather wide; cœca very small, cylindrical. Nostrils circular, basal, concealed by the reflected feathers. Eyes moderate. Ear large. Head rather small, oblong; neck short; body rather slender. Legs short; tarsus very short, compressed, with seven scutella; toes slender, compressed; claws long, slender, arched, compressed, laterally grooved, acute. Plumage soft and blended; wing rather broad; the outer three quills nearly equal, but the second longest; tail shortish, emarginate.

The Thistle-finches are distinguished from the Linnets chiefly by having the bill more attenuated toward the end. They usually seek their food on trees or tall herbaceous plants, especially the Compositæ. Two species occur in Britain.

122. Carduelis elegans. Red-fronted Thistle-finch, or Goldfinch.

Bill whitish, with the tip blackish-brown; feathers margining the bill all round, loral space, top of the head, occiput, and semicircular band on the upper part of the hind neck, black; cheeks white; forehead and throat crimson; hind neck and back umber-brown, rump ochre-yellow; wings black, the secondary coverts and basal half of the outer webs of the quills, except the first, pure yellow, the tips white; tail black, tipped with white; lower parts white, the sides brown. Female similar, with the tints less pure. Young with the colours fainter.

Male, 5, 9, 3 $\frac{2}{12}$, $\frac{11}{24}$, $\frac{7}{12}$, $\frac{6}{12}$, $\frac{4}{12}$. Female, 4 $\frac{10}{12}$, 8 $\frac{10}{12}$.

This elegantly formed and beautifully coloured bird is generally distributed in Britain. In autumn it feeds chiefly on the seeds of thistles and other Compositæ; in winter on seeds of various kinds, for which it searches the fields, sometimes in company with Linnets. Its flight is rapid, all its actions lively, its song sweet and varied. It usually nestles on trees, in gardens, or plantations, forming a very neat nest

of moss, lichens, grass, and other materials, with a lining of seed-down or other delicate filaments. The eggs, about five, are nine-twelfths in length, six and a half twelfths in breadth, bluish-white, or pale, greyish-blue, marked with a few spots of greyish-purple and brown.

Goldfinch. Goldspink. Goldie.

Fringilla Carduelis, Linn. Syst. Nat. i. 118.—Fringilla carduelis, Temm. Man. d'Ornith. i. 376.—Carduelis elegans, Red-fronted Thistlefinch, or Goldfinch, MacGillivray, Brit. Birds, i. 393.

123. Carduelis Spinus. Black-Headed Thistlefinch, or Siskin.

Male with the upper part of the head and throat black; back greenish-grey; lower parts yellow; sides white, marked with black streaks; quills and larger coverts black; basal part and outer edges of quills, and tips of secondary coverts yellow; tail yellow, black at the end. Female with the upper parts greenish-grey, streaked with black; lower parts whitish, variegated with narrow black spots.

Male, $4\frac{8}{12}$, 9, $2\frac{9}{12}$, $\frac{5}{12}$, $\frac{7}{12}$, $\frac{6}{12}$, $\frac{3}{12}$. Female, $4\frac{5}{12}$, $3\frac{3}{4}$.

The Siskin appears in autumn and winter in large flocks, feeding on the seeds of thistles and other Compositæ, as well as on those of the birch and alder, which it extracts from the cones. When engaged in this manner, it clings to the twigs in all sorts of attitudes, and is commonly so intent on its occupation as to allow a person to approach unnoticed. It has of late years been found breeding in various parts of Scotland and England; and it is probable that most, if not all, of the individuals seen in this country in the winter months are indigenous.

Aberdevine.

Fringilla Spinus, Linn. Syst. Nat. i. 332.—Fringilla spinus, Temm. Man. d'Ornith. i. 371.—Carduelis Spinus, Black-headed Thistlefinch or Siskin, MacGillivray, Brit. Birds, i. 400.

GENUS LXII. LINOTA. LINNET.

Bill short, straight, conical, nearly as broad as high at the base, compressed toward the end, acute; upper mandible with the dorsal line nearly straight, the ridge broad and rounded, the sides rounded, the edges inflected, with the notch obsolete; lower mandible with the angle semicircular, the dorsal

line straight, the ridge broad and rounded, the sides convex, the edges inflected; gape-line nearly straight. Mouth narrow; both mandibles deeply concave; tongue sagittate, narrow, grooved above, the tip slightly bifid; œsophagus dilated into a crop; proventriculus elliptical; stomach roundish, compressed, with very strong lateral muscles, and radiated tendons, its cuticular lining dense and longitudinally rugous; intestine of moderate length, rather wide; cœca very small, cylindrical. Nostrils circular, basal, concealed by the reflected feathers. Eyes of moderate size. Ears large, elliptical. Head oblong, rather large; neck short; body compact. Legs short; tarsus compressed, with seven scutella; toes slender, compressed, arched, laterally grooved, acute. Plumage soft, blended; wings rather long, broad, with seventeen quills, the outer three longest and about equal; tail rather short, emarginate.

The Linnets are intimately allied to the genera Carduelis, Fringilla, Chlorospiza, and Passer. They are small, lively, and generally prettily, though not gaudily, coloured birds, of which four are found in Britain. I have adopted the generic name *Linota*, proposed by the Prince of Canino, in place of *Linaria*, because the latter is used for a genus of plants.

124. Linota cannabina. Brown Linnet.

Male in winter with the bill dusky above; the throat yellowish-grey, streaked with brown; back and wing-coverts reddish-brown, streaked with darker; forehead and breast with the feathers dark red in their covered parts. Female with the upper parts streaked with dusky brown and greenish-yellow, the lower light yellowish-grey; the throat, breast, and sides streaked with yellowish-brown. Male in summer with the bill greyish-black above; the throat whitish, streaked with brown; back and wing-coverts reddish-brown without streaks; forehead and breast crimson or rose-red, the grey tips of the feathers being worn off. Young similar to the female, streaked above with umber-brown, and greyish-yellow, the lower parts light yellowish, more largely streaked with brown.

Male, $5\frac{3}{4}$, $9\frac{3}{4}$, $3\frac{2}{12}$, $\frac{3}{8}$, $\frac{15}{24}$, $\frac{6}{12}$, $\frac{3}{12}$. Female, $5\frac{1}{4}$, $9\frac{1}{2}$.

The colours of this species are so much brighter in summer, when the tips of the feathers have been abraded, and the tints heightened by the action of the light, that many persons can hardly be persuaded that the Rose Linnet is merely the Brown

Linnet in summer. It is generally distributed, and permanently resident, in winter betakes itself in large flocks to the neighbourhood of towns and farm-steadings, and during severe weather frequents corn-yards, mingling with other species. Its flight is rapid and undulated, its voice soft and mellow, and its song varied and remarkably sweet. In summer it is found dispersed over the hilly and mountainous parts, especially where there are thickets. The nest, which is neatly constructed of grass, moss, and wool, and lined with hair, is placed in a bush or on the ground. The eggs, from four to six, are oval, nine-twelfths long, six and a half twelfths broad, bluish-white, distantly spotted with purplish-grey and reddish-brown. Two broods are commonly reared.

Grey Linnet. Brown Linnet. Rose Linnet. Whin Linnet. Greater Redpoll. Lintie.

Fringilla cannabina, Linn. Syst. Nat. i. 322.—Fringilla cannabina, Temm. Man. d'Ornith. i. 364.—Linaria cannabina, Brown Linnet, MacGillivray, Brit. Birds, i. 371.

125. Linota montium. Mountain Linnet, or Twite.

Male in winter with the bill greyish-yellow; the upper parts light yellowish-brown, streaked with brownish-black; the feathers of the rump red in the middle; lower parts light brownish-yellow, of which colour are two bands across the wing; throat unspotted; feet black. Female in winter with the bill greyish-yellow, tipped with dusky; the colours of the plumage as in the male, but lighter, the rump destitute of red. Male in summer with the bill whitish, the rump rose-red, in other respects as in winter, but paler. Female as in winter. Young with the bill pale greyish-brown; feet light brown; plumage coloured as in the adult female, but with dark brown markings. This species is easily distinguished from the Brown Linnet by its yellowish-red throat, destitute of streaks, and the yellow colour of the bill.

Male, $5\frac{1}{4}$, $8\frac{1}{12}$, $2\frac{11}{12}$, $\frac{2}{24}$, $\frac{8}{12}$, $\frac{6}{12}$, $\frac{2}{12}$. Female, $5\frac{2}{12}$, $8\frac{2}{12}$.

The Mountain Linnet or Twite is very abundant in the northern part of Scotland, the Hebrides, Orkney and Shetland Islands, where it breeds and remains all the year. It becomes less common as we proceed southward. Its habits resemble those of the last species. Its food consists of seeds, and leaves of plants. In winter it forms large bands, and frequents farm-yards; but in summer is dispersed over the heaths and pastures. The nest is placed on the ground among heath or long grass, and is neatly constructed of dry grass, fragments of

heath, and some moss, with a lining of fibrous roots, wool, and hair. The eggs are bluish-white, spotted with brown and purplish-red.

Twite. Heather Lintie.

Fringilla flavirostris, Linn. Fauna Suec. 87.—Fringilla montium, Temm. Man. d'Ornith. i. 368.—Linaria flavirostris, Mountain Linnet, or Twite, MacGillivray, Brit. Birds, i. 379.

126. Linota borealis. Mealy Redpoll Linnet.

Length five inches and a third. Male in winter with the bill dull yellow, greyish-brown toward the end; feet dusky; upper parts light yellowish-brown, streaked with dusky brown, rump greyish-white, streaked with dusky; feathers of the head dusky, tipped with yellowish-grey, some of them dark red in the concealed parts; loral space and throat dull black; lower parts greyish-white, the sides streaked with dusky. Female similar, but with less white. Male in summer with the bill yellow, brown toward the end; forehead crimson; fore part of neck, breast, and rump rose-red; lower parts pure white.

Male, $5\frac{4}{12}$, . . , $2\frac{10}{12}$, $\frac{5}{12}$, $\frac{15}{24}$, $\frac{9}{24}$, $\frac{4}{12}$.

This species, which breeds in the northern parts of both Continents, has been procured in a few instances in England, and once in Scotland.

Fringilla borealis, Temm. Man. d'Ornith. iii. 264.—Linaria borealis, Mealy Redpoll, MacGillivray, Brit. Birds, i. 388.

127. Linota Linaria. Little Redpoll Linnet.

Length nearly five inches. Male in winter with the upper mandible dusky, the lower yellow; feet blackish-brown; throat blackish; back and sides yellowish-brown, streaked with dusky brown; loral space and edge of forehead brownish-black; feathers on the upper part of the head, and rump, dull red. Female similar, but without red on the rump, and having the dark streaks larger. Male in summer with the edge of the forehead, the loral space, and the throat black; upper part of head crimson; sides of neck, breast, and rump, carmine. Female with the fore part of the head crimson, the throat black, the other parts nearly as in winter.

Male, $4\frac{10}{12}$, $8\frac{3}{4}$, $2\frac{9}{12}$, $3\frac{7}{24}$, $\frac{13}{24}$, $\frac{9}{24}$, $\frac{3}{12}$. Female, $4\frac{9}{12}$.

This species resembles the Siskin in its habits, forming large flocks in winter, and betaking itself to the birch and alder woods, in procuring the seeds of which it hangs in all kinds of attitudes. It also feeds on the seeds of other plants, especially the Compositæ. It is generally dispersed in Bri-

tain, but more common in the southern than in the northern parts. The nest, placed in a bush or low tree, is formed of grass, moss, and downy filaments, and lined with seed-down. The eggs, four or five, are pale bluish-green, spotted with brown.

Lesser Redpoll.

Fringilla Linaria, Linn. Syst. Nat. i. 322.—Fringilla Linaria, Temm. Man. d'Ornith. i. 373.—Linaria minor, Smaller Redpoll Linnet, MacGillivray, Brit. Birds, i. 383.

GENUS LXIII. COCCOTHRAUSTES. GROSBEAK.

Bill of moderate length or rather long, straight, conical, extremely thick, higher than broad at the base, acute; upper mandible with the dorsal line slightly convex, the ridge broad and rounded, the sides rounded, the edges slightly inflected, with a slight notch close to the tip; lower mandible broader at the base, and somewhat larger than the upper, with its crura extremely thick, the angle extremely short, the dorsal line straight, the back very broad, the edges inflected; gape-line a little arched. Mouth rather wide; both mandibles deeply concave; tongue sagittate, narrow, grooved above, the tip bifid; œsophagus wide, dilated on the middle of the neck; proventriculus bulbiform; stomach roundish, compressed, with very strong lateral muscles, and dense, longitudinally rugous epithelium; intestine of moderate length, rather wide; cœca very small, cylindrical. Nostrils small, elliptical, basal, concealed by the reflected feathers. Eyes of moderate size. Ears large, oval. Head large and broad; neck short and thick; body moderate. Legs short; tarsus compressed, with seven anterior scutella; toes slender, compressed; claws rather long, arched, deep, much compressed, laterally grooved, acute. Plumage blended, soft; wing broad, of moderate length, the outer three quills nearly equal, the second longest; tail short, a little emarginate.

This genus is composed of a few species belonging to both continents, remarkable for the extraordinary thickness and strength of their conical bill. This thickness of the bill renders necessary a large size of head, and a thick neck, which give to these birds a clumsy appearance, their body and limbs seeming disproportionately small. Only one species occurs in Britain.

128. Coccothraustes atrogularis. Black-throated Grosbeak.

Male with the head yellowish-brown, the throat and space before the eyes black, the fore part of the back dark chestnut; four of the primary quills emarginate and curved outwards at the extremity. Female with the colours similar, but paler. The bill is pale flesh-coloured in winter, but in spring becomes deep blue, as in the Chaffinch. Young with the throat bright yellow; the head, neck, and upper parts, olive-brown; lower parts paler, each feather tipped with brown.

Male, $7\frac{2}{12}$, $11\frac{1}{2}$, $4\frac{1}{12}$, $\frac{10}{12}$, $\frac{10}{12}$, $\frac{8}{12}$, $\frac{4}{12}$. Female, 7.

Flocks of this species usually visit England, and less frequently Scotland, in the beginning of winter, remaining until the end of spring, and feeding on seeds and kernels. Individuals, however, are permanently resident, the eggs and young having repeatedly been found, especially in the vicinity of Epping Forest. The nest is composed of decayed leaves and lichens, with a lining of fibrous roots and hair. The eggs, from four to six, are pale olive, spotted with black, and streaked with dusky.

Hawfinch.

Loxia Coccothraustes, Linn. Syst. Nat. i. 299.—Fringilla Coccothraustes, Temm. Man. d'Ornith. i. 344. — Coccothraustes atrogularis, Black-throated Grosbeak, or Hawfinch, MacGillivray, Brit. Birds, i. 356.

GENUS LXIV. CHLOROSPIZA. GREENFINCH.

Our Greenfinch is so nearly allied to the Grosbeaks on the one hand, and to the Linnets and Sparrows on the other, that one might expect little censure, either for uniting it with any one of these genera, or for according it generic distinction. Prince Charles L. Bonaparte having preferred the latter method, I see no very urgent reason for not adopting his views.

Bill shortish, straight, conical, subpentagonal at the base, nearly as broad as high, compressed toward the end, acute; upper mandible with the dorsal line slightly curved, the ridge broad and convex, the sides convex, the edges inflected, with scarcely perceptible indications of a notch, close to the acute tip; lower mandible with the angle semicircular, the dorsal

line straight, the back and sides convex, the edges inflected; the gape-line slightly arched. Mouth rather narrow; tongue narrow, pointed, slightly bifid. Digestive organs as in the other genera. Head large; neck short; body moderate. Legs short; tarsus compressed, with seven scutella; toes moderate. Plumage blended; wings of moderate length, the outer three quills almost equal; tail rather short, emarginate.

129. Chlorospiza Chloris. Greenfinch.

Male with the upper parts and breast yellowish-green, the head tinged with grey; the edges of the wing, outer webs of alula, and part of outer webs of primary quills, with the basal part of the tail-feathers, yellow. Female with the upper parts greenish-brown, the breast greyish-brown, the wings and tail marked with yellow as in the male, but to a less extent. Young similar to the female, with faint brown streaks on the back.

Male, $6\frac{1}{4}$, $10\frac{1}{4}$, $3\frac{4}{12}$, $\frac{1}{2}$, $\frac{3}{4}$, $\frac{8}{12}$, $\frac{4}{12}$. Female, 6, 10.

The Greenfinch is generally dispersed, and permanently resident. Its notes scarcely deserve the name of song, and one of them is easily recognised by its peculiar screechy sound. The nest is constructed of fibrous roots, twigs, and straws, lined with fibres, moss, and hair. The eggs, from four to six, are nearly eleven-twelfths long, eight in breadth, bluish-white, spotted with purplish-grey, blackish-brown, and reddish-brown, with some dusky streaks. Two broods are generally reared. In autumn Greenfinches collect into large flocks, which, until spring, search the stubble-fields and corn-yards, often in company with Yellow Buntings and Linnets.

Green Linnet. Green Grosbeak.

Loxia Chloris, Linn. Syst. Nat. i. 304.—Fringilla Chloris, Temm. Man. d'Ornith. i. 346.—Linaria Chloris, Green Linnet, or Greenfinch, MacGillivray, Brit. Birds, i. 365.

GENUS LXV. PASSER. SPARROW.

Bill shortish, straight, conical, subpentagonal and nearly as broad as high at the base; upper mandible with the dorsal line declinate and slightly arched, the ridge narrow but obtuse, the sides much rounded, the edges inflected, but overlapping, with an obsolete notch or slight sinus close to the acute tip; lower mandible somewhat smaller, with the

angle short and rounded, the dorsal line very slightly convex, the ridge broad, the sides much rounded, the edges sharp and inflected. Mouth rather narrow; both mandibles deeply concave; tongue sagittate, fleshy, subulato-lanceolate, involute, grooved above, with the tip slightly bifid; œsophagus enlarged into a crop of considerable size; proventriculus bulbiform; gizzard roundish, compressed, with very strong muscles, and dense, longitudinally rugous epithelium; intestine of moderate length, rather wide; cœca very small; nostrils broadly elliptical, oblique, basal, concealed by the reflected feathers. Eyes of moderate size. Head rather large, oblong; neck short; body compact. Tarsus short, compressed, with seven anterior scutella; toes of moderate length, slender; claws rather long, arched, much compressed, laterally grooved, acute. Plumage blended; wing rather short, with the outer three quills nearly equal, but the third longest; tail rather short, slightly emarginate.

130. Passer domesticus. House Sparrow.

Male with the upper part of the head light brownish-grey; a broad band of chestnut from the eye down the neck, of which the sides are greyish-white; the throat black; the back chestnut mixed with black; a white band across the wing; the lower parts light brownish-grey. Female with the head greyish-brown above, the sides of the neck yellowish-grey, the lower parts light brownish-grey. Young similar to the female.

Male, $6\frac{1}{4}$, $9\frac{1}{2}$, $3\frac{2}{12}$, $\frac{1}{2}$, $\frac{9}{12}$, $\frac{9}{12}$, $\frac{3}{12}$. Female, 6, $9\frac{4}{12}$.

The House Sparrow, the boldest and most familiar of our passerine birds, is generally dispersed in Britain and Ireland, residing in towns, villages, farm-buildings, and seldom betaking itself to places remote from human habitations. In autumn and winter, the Sparrows, usually in large flocks, search the fields for grain and seeds, in the former season often committing considerable havoc among wheat. Stack-yards and dunghills are favourite places of resort at all seasons. The sparrow has a rapid and somewhat undulated flight, advances on the ground by hops, rolls itself in the dust, basks in the sun, loves to lie basking on the sunny side of roofs, or on wall tops, and often perches on trees and bushes. Its food consists of farinaceous substances generally, occasionally insects, sometimes flesh, suet, in short almost any sort of refuse. It nestles in some hole, or cavity, or crack, in a wall

or chimney, or under the eaves, or among the thatch, in short in any convenient locality at a considerable height. The nest is bulky, composed of straw, grass, leaves, twigs, and the like, with a lining of wool, hair, and feathers. The eggs, from four to six, ten or eleven-twelfths long, and about seven-twelfths in breadth, are greyish-white, marked all over with longitudinally oblong spots of pale grey and greyish-black; but the tints and markings differ extremely.

Common Sparrow. Domestic Sparrow.

Fringilla domestica, Linn. Syst. Nat. i. 323.—Fringilla domestica, Temm. Man. d'Ornith. i. 350.—Passer domesticus, House Sparrow, MacGillivray, Brit. Birds, i. 340.

131. Passer montanus. Mountain Sparrow.

Male with the upper part of the head chestnut-red; a band over the eye, the auricular feathers, the space before the eye, and the throat black; the sides of the neck, and a collar on the nape, white; the back chestnut mixed with black; two white bands across the wings; the lower parts whitish. Female with the colours similar, but paler.

Male, $5\frac{8}{12}$, . ., 3, $\frac{9}{24}$, $\frac{8}{12}$, $\frac{7}{12}$, $\frac{3}{12}$. Female, $5\frac{1}{2}$.

Although common on the Continent, this species is rare in Britain, where it is met with only in some parts of England. Although in its mode of flight and general habits it resembles the common species, it differs in several respects, and especially in nestling, not in houses, but in holes in decayed trees.

Tree Sparrow.

Fringilla montana, Linn. Syst. Nat. i. 234.—Fringilla montana, Temm. Man. d'Ornith. i. 354.—Passer montanus, Tree Sparrow, MacGillivray, Brit. Birds, i. 351.

GENUS LXVI. CORYTHUS. PINEFINCH.

Bill short, stout, bulging at the base, conical, acute; upper mandible with the dorsal line very convex, the sides rounded, the edges gently ascending at the base, then arched, slightly festooned, with very slight notches, the tip declinate and sharp; lower mandible with the angle short and wide, the dorsal line slightly convex, the back broad, the sides convex, the edges somewhat inflected, the tip narrow, but rather obtuse. Mouth of moderate width; tongue short, much compressed, concave above toward the end, which is obtuse; œsophagus dilated into a large crop; proventriculus oblong;

stomach a strong gizzard; intestine of moderate length and width; cœca very small. Nostrils round, concealed by reversed feathers. Eyes rather small. Head large, roundish-ovate; neck short; body moderately stout. Tarsus short, compressed, with seven scutella; toes stout; claws long, moderately arched, compressed, acute. Plumage soft and full; wings of moderate length, the outer three quills nearly equal; tail rather long, deeply emarginate.

This genus is closely allied to Pyrrhula, and perhaps still more intimately to Loxia, although the bill has a very different aspect.

132. Corythus Enucleator. Red Pinefinch.

Male with the head, neck, and fore part of the breast and rump bright red, or carmine tinged with vermilion, the back greyish-brown, the feathers edged with red; the wings dusky, with two white bars; the lower parts light grey. Female with the head yellowish-brown, the rump brownish-yellow, the rest of the plumage grey, the wings as in the male. Young like the female.

Male, $8\frac{1}{2}$, . . , $4\frac{3}{4}$, $\frac{15}{24}$, $\frac{9}{12}$, $\frac{8}{12}$, $\frac{4}{12}$. Female, $8\frac{1}{4}$.

The habits of this species are similar to those of the Crossbills. It occurs in the northern parts of both Continents, and feeds on the seeds of pines, and various other plants. Pennant mentions having met with it early in August in the pine forest of Invercauld in Aberdeenshire.

Pine Bullfinch. Pine Grosbeak.

Loxia Enucleator, Linn. Syst. Nat. i. 299.—Pyrrhula Enucleator, Temm. Man. d'Ornith. i. 333.—Pyrrhula Enucleator, Pine Bullfinch, MacGillivray, Brit. Birds, i. 411.

GENUS LXVII. LOXIA. CROSSBILL.

Bill of moderate length, very strong, subpentagonal and rather higher than broad at the base, tapering, compressed toward the end, with the tip laterally deflected and curved in opposite directions; upper mandible larger, with its dorsal line convex, the ridge rather narrow, the tip decurved, compressed, worn beneath to a thin edge, and slightly bent to one side; lower mandible with the angle very short and broad, the dorsal line convex, the tip compressed, acute, and deflected. Mouth rather narrow; tongue slender, emarginate

and papillate at the base, compressed in the middle, horny and concave above toward the end; œsophagus rather wide, and having a large crop; proventriculus oblong; stomach rather small, roundish, with strong muscles, and dense rugous epithelium; intestine shortish, rather wide, with very small cœca. Nostrils basal, circular, concealed by the reversed feathers. Eyes rather small. Aperture of ear large. Head large, roundish; neck short; body compact. Legs short and strong; tarsus compressed, with six anterior scutella; toes of moderate strength; claws large, arched, compressed, laterally grooved, very acute. Plumage rather blended; wings long, with the outer three quills nearly equal; tail short, emarginate.

The Crossbills are especially remarkable for the manner in which the tips of their mandibles become bent and elongated, so as to cross each other in a considerable degree. In the young birds, previous to their leaving the nest, the bill is of the usual form; so that the characteristic peculiarity of the genus results from the habit of applying the bill with a lateral twist, in order to disengage the seeds of the cones of firs and pines. They are inhabitants of the colder regions, and migrate in large flocks. One species is not very uncommon in Britain, where some pairs have also been known to breed.

133. Loxia Pytiopsittacus. Parrot Crossbill.

Length about eight inches, wing from flexure four and a third, bill seven-twelfths in height at the base, of about the same length as the tarsus, extremely bulging, its outlines very convex, the points short, that of the lower slightly ascending. Male dull red above, brighter beneath, the rump yellowish-red, the wings and tail dark olive-brown. Female greyish-brown tinged with yellow above, the rump yellow, light yellowish-grey beneath, the wings and tail as in the male. Young males brownish-red, or yellowish-red, or wax yellow, or mottled with yellow and red.

Male, 8, .., $4\frac{1}{4}$, 1, $\frac{9}{12}$, $\frac{8}{12}$, $\frac{5}{12}$.

A specimen supposed to be British is in the museum of the University of Edinburgh, and another has been described by Mr Selby. It is not very certain that this species is not constituted merely of very large individuals of the next.

Loxia Pytiopsittacus, Temm. Man. d'Ornith. i. 324.—Loxia Pytiopsittacus, Parrot Crossbill, MacGillivray, Brit. Birds, i. 429.

134. Loxia europæa. European Crossbill.

Length about seven inches, wing from flexure four, bill from four and a half to six and a half twelfths in height at the base, longer than the tarsus, much curved, the point of the lower mandible seldom reaching so high as the level of the ridge of the upper. Male dull red above, brighter beneath, the rump yellowish-red, the wings and tail dark olive-brown. Female greyish-brown tinged with yellow above, the rump yellow, light yellowish-grey beneath, the wings and tail as in the male. Young light brownish-grey, streaked with dusky, the rump tinged with yellow; the lower parts white, streaked with greyish-brown. Young males brownish-red, or yellowish-red, or wax-yellow, or mottled with yellow and red.

Male, $7\frac{1}{2}$, $11\frac{9}{12}$, $4\frac{9}{12}$, $\frac{8}{12}$, $\frac{7}{12}$, $\frac{4}{12}$. Female, $7\frac{1}{4}$, $11\frac{7}{12}$.

Crossbills make their appearance at irregular periods, in different parts of the country, generally confining themselves to plantations and woods of fir and pine, in which they find their favourite food, consisting of the seeds of these trees, which they extract from between the scales of the cones. They cling to the twigs and cones, keep up a low shrill chatter while feeding, and are generally regardless of danger. They nestle at all seasons; at least, nests have been found in winter, in spring, and in summer.

Crossbill. Sheld-apple.

Loxia curvirostra, Linn. Syst. Nat. i. 299.—Loxia curvirostra, Temm. Man. d'Ornith. i. 328.—Loxia europæa, Common European Crossbill, MacGillivray, Brit. Birds, i. 417.

135. Loxia leucoptera. White-winged Crossbill.

Length about six and a half inches; mandibles extremely compressed toward the end; wings black, with two transverse white bands. Male bright crimson above and beneath. Female dusky, tinged with yellow above, the rump wax-yellow, the lower parts yellowish-grey, longitudinally streaked with dusky. Young like the female, but with less yellow.

Male, $6\frac{4}{12}$, $10\frac{1}{2}$, $3\frac{1}{2}$, $\frac{8}{12}$, $\frac{15}{24}$, $\frac{5}{12}$, $\frac{5}{12}$. Female, $6\frac{2}{12}$, 10.

This species, which occurs abundantly in the northern regions of America, is occasionally met with on the European Continent. A specimen was obtained near Belfast in 1802, and another near Worcester in 1836.

Loxia leucoptera, Gmel. Syst. Nat. i. 844.—Loxia leucoptera, Temm. Man. d'Ornith. iii. 243.—Loxia leucoptera, White-winged Crossbill, MacGillivray, Brit. Birds, iii. 689.

GENUS LXVIII. PYRRHULA. BULLFINCH.

Bill very short, strong, bulging, subpentagonal, and about as high as broad at the base; upper mandible with its dorsal line convex, the sides much rounded, the edges sharp, without notch, but forming a wide sinus or curve toward the tip, which is decurved, and contracts to a narrow, rather blunt point, extending considerably beyond the lower; lower mandible with the angle very short, the dorsal line convex, the sides much rounded, the edges involute, with a thin angular prominence near the middle, the tip slightly compressed. Mouth of moderate width; tongue very short, oblong, concave above; œsophagus dilated into a crop; proventriculus oblong; stomach a strong gizzard; intestine of moderate length and width; cœca very small. Nostrils small, round, basal, concealed. Eyes rather small. Ear large. Head rather large; neck short; body moderate. Tarsus very short, compressed, with seven scutella; toes slender and short, the lateral about equal; claws rather long, arched, much compressed, laterally grooved, acute. Plumage soft and blended; wings of moderate length, the second, third, and fourth quills longest; tail rather long, emarginate.

136. Pyrrhula pileata. Hooded Bullfinch.

Male with the upper part of the head, a band round the base of the lower mandible, the wings, upper tail-coverts, and tail bluish-black; the back ash-grey, the rump white, the lower parts bright red. Female with the same parts black, the back brownish-grey, the lower parts dull yellowish-brown. Young with the upper parts greyish-brown, the lower yellowish-brown.

Male, 6, $9\frac{10}{12}$, $3\frac{4}{12}$, $\frac{4}{12}$, $\frac{8}{12}$, $\frac{6}{12}$, $\frac{3}{12}$. Female, $5\frac{10}{12}$, $9\frac{10}{12}$.

Generally distributed in Britain, occurring in most of the wooded and cultivated districts, although not very common any where. Its flight is quick and undulated, its ordinary note a soft plaintive whistle, its song short and mellow, its food seeds of various kinds. Its nest is placed on a bush or tree,

and is composed of twigs, moss, and slender roots. The eggs, four or five, are nine and a half twelfths long, seven and a half twelfths in breadth, bluish-white, spotted and streaked with purplish-grey and reddish-brown.

Coal-hood. Red-hoop. Tony-hoop. Alp. Pope. Nope.

Loxia Pyrrhula, Linn. Syst. Nat. i. 338.—Pyrrhula vulgaris, Temm. Man. d'Ornith. i. 338.—Pyrrhula pileata, Common Bullfinch, MacGillivray, Brit. Birds, i. 407.

GENUS LXIX. CALAMOPHILUS. PINNOCK.

Bill short, rather slender; upper mandible with the dorsal line considerably convex, the sides also convex, the edges thin, toward the end arched, without notch, the tip narrow and declinate; lower mandible with the angle rather narrow, the dorsal line almost straight, the edges inflected, the tip narrow. Tongue slender, trigonal, obliquely truncate and lacerate; œsophagus enlarged into a crop; stomach muscular, with dense rugous epithelium; intestine of moderate length; cœca very small. Nostrils small, round, concealed. Eyes of moderate size. Ear roundish, rather large. Head ovate, moderate; neck short; body rather slender. Feet of moderate length; toes moderate; claws rather long, arched, compressed, acute. Plumage very soft, blended; wings short, rounded; first quill extremely small; second a little shorter than third and fourth; tail very long, graduate, of twelve weak rounded feathers.

137. Calamophilus biarmicus. Bearded Pinnock.

Male with the head light greyish-blue, the general colour light red; the wings variegated with black and white; mystachial bands of elongated lanceolate feathers, and lower tail-coverts, black. Female lighter, with the head merely tinged with grey, no mystachial bands, and the lower tail-coverts light red. Young like the female, but with the head and back black.

Male, $6\frac{1}{2}$, $7\frac{1}{4}$, $2\frac{1}{2}$, $\frac{9}{24}$, $\frac{9}{12}$, $\frac{6}{12}$, $\frac{5}{24}$. Female, $6\frac{1}{4}$.

This beautiful bird, which has by authors usually been referred to the genus Parus, but which I think, judging from its digestive organs, must belong to the Huskers, is said to be extensively dispersed over the Continent, inhabiting the marshy borders of rivers and lakes. In England it is found chiefly

along the Thames, and in the counties of Cambridge, Norfolk, Suffolk, and Lincoln. Residing among the reeds and other aquatic plants, it clings to their stems in the manner of Tits, Siskins, or Redpolls. Its food consists of seeds and small testaceous mollusca. The nest, generally placed in a tuft of grass or rushes on the ground, is composed of leaves of grass and sedge, and lined with panicles of seeds. The eggs, five or six, are eight and a half twelfths long, white, with a few light red lines and dots.

Bearded Titmouse. Least Butcher-bird.

Parus biarmicus, Linn. Syst. Nat. i. 342.—Parus biarmicus, Temm. Man. d'Ornith. i. 298.—Calamophilus biarmicus, Bearded Pinnock, MacGillivray, Brit. Birds, iii. 694.

While some birds, as the Vagatrices, are well adapted for walking on the ground, and others, as the Cantatrices and Deglubitrices, are fitted for hopping from twig to twig, or for advancing on the ground by short leaps; there are others more peculiarly fitted for climbing in various ways. Thus, the Parrots ascend by grasping the twigs with their feet and bill; the Woodpeckers and Creepers by hooking themselves against the bark, and supporting themselves by pressing their tail against the surface. Of these climbing birds some have the three fore toes more or less united at the base and spreading little, while others have the outer toe directed outwards or backwards. Hence two groups, designated by the names of Creepers and Climbers.

ORDER IX. REPTATRICES. CREEPERS.

Birds of small size, having a slender body, short or moderate neck, small oblong head. Bill more or less elongated, slender, compressed, acute. Mouth narrow; tongue slender, varying in length; œsophagus of moderate width, without dilatation; stomach of moderate size, oblong or elliptical, with the lateral muscles rather thick, the epi-

thelium dense and longitudinally rugous; intestine rather short; cœca very small, or obsolete. Tarsi short, slender; toes long, slender, four; the anterior parallel, and more or less united, the hind toe very stout; claws large, arched, extremely compressed, very acute. Plumage soft, more or less blended; wings short, concave, rounded; tail of ten or twelve feathers.

Several natural groups enter into this order, namely, the MELLIPHAGINÆ, CERTHIINÆ, DENDROCOLAPTINÆ, and SITTINÆ. Of these, however, we have representatives of only the second and last.

FAMILY XXV. CERTHIINÆ. CERTHINE BIRDS, OR TREE-CREEPERS.

The Certhiinæ, which are closely allied to the Sylviinæ, are all of small size, with the body slender, the neck generally short, the head rather large and ovate. Bill of moderate length or elongated, slender, arched, with the notches obsolete, the tip acute. Both mandibles internally very narrow and concave; tongue very slender, emarginate and papillate at the base, channelled above, tapering, with the point thin-edged, bristly, rather obtuse; œsophagus of moderate and nearly uniform width; proventriculus oblong; stomach elliptical, moderately muscular, with dense, longitudinally rugous epithelium; intestine short and wide; cœca very small. Trachea with four pairs of inferior laryngeal muscles. Nostrils linear or oblong, exposed. Eyes of moderate size. Aperture of ear large, roundish. Tarsi short, slender; anterior toes united at the base, extremely compressed, the outer longer than the inner, the hind toe very long; claws long, arched, extremely compressed, acute. Plumage soft, blended; no bristles; wings rather short, broad, concave, much

rounded, the first quill short; tail of moderate length, rounded.

GENUS LXX. CERTHIA. TREE-CREEPER.

Bill rather long, very slender, subtrigonal, tapering, arcuate, much compressed, acute; upper mandible with its dorsal line arcuate, the ridge very narrow, the edges sharp, without notch; lower mandible with the angle very narrow, the dorsal line decurved; gape-line arcuate. Tongue long, narrow, sagittate, tapering, lacerate, acute; œsophagus of moderate width; stomach elliptical, muscular; intestine very short; cœca very small. Nostrils linear-oblong, exposed. Eyes of moderate size. Head ovato-oblong; neck short; body small. Tarsus slender, compressed, with seven scutella, the upper indistinct; toes rather large, extremely compressed; hind toe very large, second much shorter than fourth, anterior united at the base; claws very long, arched, extremely compressed, laterally grooved, very acute. Plumage very soft, blended; wings rather long, convex, much rounded, of nineteen quills, the first short, the fourth and fifth longest; tail long, of twelve slightly arched, stiffish, pointed feathers.

138. Certhia familiaris. Brown Tree-creeper.

Upper part of the head dark brown, neck and back yellowish-brown, each feather with a median whitish streak; rump yellowish-red; wings with a transverse whitish band; lower parts silvery white. Young similar, but with the feathers more loose, and the tints duller.

Male, $5\frac{5}{12}$, 8, $2\frac{7}{12}$, $\frac{7}{12}$, $\frac{7}{12}$, $\frac{11}{24}$, $\frac{4}{12}$. Female, $5\frac{2}{12}$, $7\frac{1}{2}$.

The Brown Tree-creeper is permanently resident in all the wooded parts of the country, but nowhere numerous. It alights at the bottom of a tree, clinging to the bark with its claws, ascends by short starts, leaping forward as it were, and supporting itself by pressing its tail against the bark. Its food consists of insects, larvæ, and pupæ, which it finds in the crevices. On ordinary occasions it pays little attention to a person intruding upon its haunts, and may thus be easily shot. Its nest is placed in some hole in a tree, or rock, or among the roots in a mossy bank, and is composed of grass, moss,

fibrous roots, and other materials, with a lining of feathers. The eggs, from five to eight, are seven and a half twelfths long, five-twelfths in breadth, glossy, white, dotted with brownish-red or light red, the dots often disposed in a broad belt near the larger end.

Creeper. Tree-speeler. Brown Woodpecker.

Certhia familiaris, Linn. Syst. Nat. i. 184.—Certhia familiaris, Temm. Man. d'Ornith. i. 410.—Certhia familiaris, Brown Tree-creeper, MacGillivray, Brit. Birds, iii. 33.

GENUS LXXI. UPUPA. HOOPOE.

Bill longer than the head, very slender, slightly arched, angular, pentagonal at the base, four-sided toward the end, tapering, acute; upper mandible with the ridge very narrow, the sides flattened, the edges sharp, without notch; lower mandible with the angle rather long, the ridge sharp, the tip acute; gape-line slightly arcuate. Mouth of moderate width; tongue very short, fleshy, flattened. Nostrils oblong, basal. Eyes moderate. Head ovato-oblong; neck moderate; body rather slender. Feet very short; tarsus roundish, with seven anterior scutella; toes moderate, compressed; the first large, the third and fourth connate at the base; claws of moderate length, stout, compressed, acute, well-arched, excepting that of the hind toe. Plumage soft, blended; feathers on the top of the head elongated, forming a large crest; wing rather long, very broad, much rounded, of nineteen quills, the fourth longest; tail nearly even, of ten soft feathers.

139. Upupa Epops. European Hoopoe.

Head and neck light red, crest-feathers tipped with black; fore part of back light purplish-red, middle part barred with black and reddish-white, tail-coverts black, barred with white; wings and tail black, the former with several, the latter with a single band of white.

Male, 12, . . , $5\frac{5}{12}$, $2\frac{1}{4}$, $\frac{10}{12}$, $\frac{8}{12}$, $\frac{9}{24}$.

The Hoopoe is merely an occasional or accidental visiter, but has been met with in most parts of the country. Its habits are not known with certainty; but the form of its tarsi and claws would lead us to suppose that it creeps upon trees. It is said to nestle in holes, and to lay from two to five light grey or bluish-white eggs.

Upupa Epops, Linn. Syst. Nat. i. 183.—Upupa Epops, Temm. Man. d'Ornith. i. 415.—Upupa Epops, European Hoopoe, MacGillivray, Brit. Birds, iii. 41.

FAMILY XXVI. SITTINÆ. SITTINE BIRDS, OR NUTHATCHES.

Birds of small size, having the body short and compact, the neck short, the head rather large. Bill of moderate length, straight, slender, pentagonal at the base, four-sided toward the end, with the tip acute or somewhat cuneate. Mouth narrow; tongue slender, very thin, with the point abrupt, and furnished with several bristles; œsophagus rather wide, tapering, without crop; proventriculus oblong; stomach rather large, roundish, muscular, with dense, rugous epithelium; intestine rather short and wide; cœca very small. Plumage very soft, full, blended; wings long, very broad, with the third and fourth quills longest; tail short, of twelve soft feathers. Tarsi short or moderate, slender; toes long, slender, compressed, the anterior coherent at the base, the hind toe elongated; claws long, well-arched, compressed, acute.

In the form of the feet and claws the Sittinæ resemble the Certhiinæ, while in the structure of the bill they are somewhat allied to the Woodpeckers, and in their general aspect and habits approach the Parinæ.

GENUS LXXII. SITTA. NUTHATCH.

Bill of moderate length, straight, slender, but strong, somewhat conical, slightly higher than broad, pentagonal at the base, four-sided toward the end, with the point sharp, or somewhat wedge-shaped from use; upper mandible with the dorsal line almost straight, the ridge rather obtuse, the edges without notch; lower mandible with the angle rather short, the tip acute; gape-line straight. Mouth narrow; tongue slender, abrupt, bristle-tipped. Nostrils oblong, basal. Head

ovate, rather large; neck short; body very short. Tarsus very short, compressed, with seven very broad anterior scutella; toes large, much compressed, the first long, the three anterior united at the base as far as the second joint; claws long, much arched, extremely compressed, laterally grooved, very acute. Plumage soft and blended; wings long, very broad, rounded, the first quill very small, the fourth longest; tail short, even, of twelve rounded feathers.

140. Sitta europæa. European Nuthatch.

Upper parts bluish-grey; throat and cheeks white; loral space and a band behind the eye black; lower parts light reddish-yellow, sides brownish-red. Young similar, but with the plumage more loose and the colours paler.

Male, $5\frac{8}{12}$, $10\frac{1}{4}$, $3\frac{4}{12}$, $\frac{9}{12}$, $\frac{9}{12}$, $\frac{15}{24}$, $\frac{9}{24}$.

The Nuthatch is not generally distributed in Britain, being of rare occurrence in the northern parts of England, and not hitherto observed in Scotland. Like the Creeper and Woodpeckers, it ascends the trunks and branches of trees, by means of its long-curved claws, but without employing its tail as a support, and it descends in the same manner, headforemost, in which respect it differs from all our other birds. Besides insects, it feeds on the kernels of nuts, which it perforates with its strong pointed bill. All its actions are abrupt and lively, like those of the Tits. It nestles in a hole of a tree, laying six or seven eggs, which are white, spotted with light red.

Sitta europæa, Linn. Syst. Nat. i. 177.—Sitta europæa, Temm. Man. d'Ornith. i. 407.—Sitta europæa, European Nuthatch, MacGillivray, Brit. Birds, iii. 48.

ORDER X. SCANDRICES. CLIMBERS.

Birds of small or moderate size, having the body compact, the neck of moderate length, the head rather large. Bill straight, or slightly curved, usually about the length of the head, strong, tapering, compressed toward the end. Tongue long, slender, flattened and fringed, or cylindrical,

fleshy, with a horny barbed tip and extensile by means of the elongated hyoid bones; œsophagus without crop; proventriculus extremely large; stomach moderately muscular, with a dense longitudinally rugous epithelium; intestine of moderate length, rather wide; no cœca. Tarsi short, compressed, anteriorly scutellate; toes compressed, moderate, excepting the first, which is short, sometimes rudimentary or wanting, the fourth or outer long and directed backwards; claws strong, much arched, compressed, laterally grooved, very acute.

Of this order we have in Britain only a few representatives of a single family, the Picinæ. They cling to the bark of trees by means of their strong curved claws, ascend vertically or obliquely, tap the loose bark of decayed trees, or detach it in fragments, or break up the rotten wood, to obtain the larvæ and insects which shelter there. They nestle in holes which they bore in decayed trees.

FAMILY XXVII. PICINÆ. PICINE BIRDS, OR WOODPECKERS.

Bill strong, straight, tapering, angular, wedge-shaped, or compressed and abrupt at the end. Tongue long, slender, round, with a flattened narrow tip furnished with lateral reversed prickles, and capable of being thrust out to a great extent, by means of the elongated hyoid bones, which curve round the skull as far as the forehead, and sometimes even surround the right eye; œsophagus of moderate width, or rather narrow; proventriculus very wide; stomach moderate, roundish, with moderately strong muscles, and dense, rugous epithelium; intestine of moderate length, rather wide; no cœca; cloaca enormously large. Tarsi short; toes long, the outer elongated and directed outwards and backwards, the first small,

sometimes wanting; claws large, well arched, compressed, laterally grooved, very acute. Wings large, rounded; tail cuneate, of twelve feathers, the lateral very small, the rest with very strong shafts, and stiff deflected filaments.

The genera differ little from each other, either in form or in habits. All the species live chiefly on larvæ and insects which they obtain by digging into the bark and wood of decayed trees. They also eat ants, berries, and various soft fruits.

GENUS LXXIII. PICUS. WOODPECKER.

Bill rather long, stout, conical, pentagonal, straight, laterally bevelled at the tip so as to present an edged, abrupt, wedge-like termination; upper mandible with the dorsal line declinate and straight, the ridge sharp, the sides with a longitudinal elevated line remote from the ridge; the tip truncate; lower mandible with the ridge sharp and almost straight, the tip truncate. Mouth of moderate width; tongue vermiform, terminated by a narrow, flat, horny point, which is ciliated with short reversed bristles; œsophagus of moderate width; proventriculus very wide; stomach roundish, a little compressed, its muscular coat rather thin, its epithelium dense; intestine of moderate length, rather wide; no cœca. Nostrils elliptical or oblong, concealed by reversed bristly feathers. Eyes of moderate size. Head oblong; neck of ordinary length; body rather slender. Feet very short; first toe very short; second of moderate length, and united at the base to the third; fourth long, and directed backwards; claws very large, curved, acute. Wings large, with nineteen quills, the first very small, the fourth and fifth longest; tail rounded or wedge-shaped, with the shafts very strong, the terminal filaments stiff and deflected.

141. Picus martius. Great Black Woodpecker.

Plumage brownish-black; the male with the upper part of the head, the female with only the occiput, crimson.

Male, 19, .., $9\frac{1}{2}$, $2\frac{4}{12}$, $1\frac{5}{12}$, $\frac{9}{12}$, 1. Female, $18\frac{1}{4}$.

This species has been met with in England only in a few

instances. Two specimens in my collection, were shot near Nottingham.

Picus martius, Linn. Syst. Nat. i. 173.—Picus martius, Temm. Man. d'Ornith. i. 390.—Picus martius, Great Black Woodpecker, MacGillivray, Brit. Birds, iii. 77.

Donachie Wood 142. PICUS PIPRA. PIED WOODPECKER.

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Male with the upper part of the head, the back, and a band on the side of the neck, bluish-black; a patch of crimson on the hind head; a broad band of white over the forehead and under the eye, a patch on the side of the neck, a narrow line over the eye, and the scapulars, white; the lower parts brownish-white, excepting the abdomen and lower tail-coverts, which are crimson. Female similar, but with the occiput black, the white parts tinged with yellow, and the lower pale brown. Young with the black parts tinged with brown, and the top of the head crimson.

Male, $9\frac{3}{4}$, 17, $5\frac{1}{2}$, $1\frac{2}{12}$, 1, $\frac{8}{12}$, $\frac{7}{12}$. Female, $9\frac{1}{2}$, $16\frac{1}{2}$.

The Pied, or Greater Spotted Woodpecker, is extensively distributed in England and Scotland, as well as in Ireland. It is permanently resident, frequents woods and plantations, especially those of beech and pine, feeding on insects and larvæ, which it obtains in the decayed bark and wood. The eggs are placed in a hole formed in a tree, without any other nest than chips of wood. They are generally five, pure white, glossy, elliptical, one inch and a twelfth in length, and nine-twelfths in breadth.

Greater Spotted Woodpecker. Whitwall. Wood-pie. French Pie.

Picus major, Linn. Syst. Nat. i. 176.—Picus major, Temm. Man. d'Ornith. i. 395.—Picus Pipra, Pied Woodpecker, MacGillivray, Brit. Birds, iii. 80.

143. PICUS STRIOLATUS. STRIATED WOODPECKER.

Male with the forehead white, the crown crimson, margined with black, the back and scapulars transversely barred with black and white; sides of the head and neck white, with a black band; lower parts brownish-white, breast and sides with longitudinal dusky lines. Female similar, but with the crown white.

Male, $5\frac{1}{2}$, 10, $3\frac{1}{2}$, $\frac{7}{12}$, $\frac{7}{12}$, $\frac{5}{12}$, $\frac{5}{12}$.

This species occurs in most of the southern, eastern, and midland counties of England, extending as far north as Derby, and westward to Shrewsbury and Hereford. Its habits are

similar to those of the last species. It usually prefers the higher branches of trees, although it by no means confines itself to them, and is so intent on searching for its food that it pays little attention to a person coming to watch or shoot it. It produces an extraordinarily loud, rapid, vibratory noise, somewhat resembling that made by the boring of a large auger in hard wood, but its ordinary voice is a feeble squeak, several times repeated. The eggs, five in number, and white, are laid in the bottom of a hole formed in decayed wood.

Lesser Spotted Woodpecker. Hickwall. Crank-bird. Pump-borer.

Picus minor, Linn. Syst. Nat. i. 176.—Picus minor, Temm. Man. d'Ornith. i. 399.—Picus striolatus, Striated Woodpecker, MacGillivray, Brit. Birds, iii. 86.

GENUS LXXIV. GECINUS. GREEN-WOOD-PECKER.

The common Green-Woodpecker and a few nearly allied species may be separated from the rest to constitute a genus, to which Boie has given the name of Gecinus. This genus makes some approximation to Colaptes, or that of the Golden-winged Woodpeckers of America, and is remarkable especially for having the two glosso-laryngeal muscles twisted round the trachea, which I have not found to be the case in any of the other fifteen or twenty species which I have dissected, with the exception of Colaptes auratus.

Bill rather long, somewhat slender, angular, straight, tapering, laterally bevelled at the tip, so as to present an edged, abrupt, wedgelike termination; upper mandible with the dorsal line slightly convex, the ridge sharp, the sides with a longitudinal elevated line close upon the ridge, the tip slender, and slightly truncate. Mouth narrow; tongue vermiform, terminated by a narrow, flat, horny point, fringed with reversed bristles; the other characters, as in Picus.

144. Gecinus viridis. Crimson-headed Green-Woodpecker.

Male with the upper parts yellowish-green, the rump greenish-yellow; the upper part of the head and hind neck crimson, the loral and orbital spaces, and a mystachial band, black, the latter with a crimson patch; the lower parts pale greenish-

yellow, tinged with grey, faintly barred behind with dusky. Female similar, but without red on the cheek. Young greyish-green above, the upper part of the head grey, spotted with crimson, the lower parts greenish-white, transversely barred with dusky.

Male, $13\frac{1}{2}$, 21, $6\frac{1}{2}$, $1\frac{9}{12}$, $1\frac{2}{12}$, 1, $\frac{10}{12}$. Female, 13, 21.

The Green Woodpecker does not occur in any part of Scotland, but is common, and permanently resident in most of the wooded districts of England. Besides searching trees for larvæ and insects, it often betakes itself to the ground to seek for insects, and particularly ants, and their eggs. In the breeding season it emits a noise resembling a shout of laughter, as well as a remarkable sound supposed to be produced by tapping with its bill on some decayed and sonorous branch. The eggs, five in number, and pure white, are laid in a hole dug for the purpose in decayed wood.

Hewhole. Woodwall. Woodspite. Yaffler. Yappingale. Popinjay. Rainbird.

Picus viridis, Linn. Syst. Nat. i. 175.—Picus viridis, Temm. Man. d'Ornith. i. 391.—Picus viridis, Green Woodpecker, MacGillivray, Brit. Birds, iii. 91.

GENUS LXXV. YUNX. WRYNECK.

Bill rather short, slender, straight, tapering, acute; upper mandible with the dorsal line almost straight, the ridge convex toward the end, the sides sloping, the edges sharp, without notch or sinus, the tip acute; lower mandible with the angle long, the dorsal line straight, the tip acute; gape-line straight. Mouth rather narrow; tongue extremely extensile, vermiform, with its terminal part horny, flat tapering, without bristles. Nostrils linear, nasal membrane large, and anteriorly bare. Eyes of moderate size. Head oblong, flattened in front; neck short; body rather slender. Feet short, rather slender; tarsus feathered anteriorly a little below the joint, compressed, with seven anterior and as many smaller posterior scutella; toes two before, parallel, united at the base; two behind, the first very small, the fourth almost as long as the third; claws moderate, arched, extremely compressed, laterally grooved, acute. Plumage very soft; wings moderately long, straight, rather acute, of twenty feathers; first quill extremely small, third longest; tail rather long,

rounded, of ten broad, rounded feathers, of ordinary structure.

This genus is connected with the Picinæ by the form of the bill, and the extensile tongue, which, however, is not barbed.

145. Yunx Torquilla. Wryneck.

Plumage of the upper parts brownish-grey, spotted, undulated, and dotted with blackish-brown; a longitudinal band of dark brown on the hind neck; the fore neck and sides greyish-yellow, with transverse narrow bars of brownish-black.

Male, 7, 11, $3\frac{7}{12}$, $\frac{6}{12}$, $\frac{9}{12}$, $\frac{8}{12}$, $\frac{4}{12}$.

The Wryneck, which is one of the most beautiful of our native birds, arrives from the middle to the end of April, generally preceding the Cuckoo, and disperses over the country. extending northward as far as the middle division of Scotland. It feeds on insects, larvæ, and ants, which it seizes by means of its tongue, in the manner of the Woodpeckers. It is remarkable for a habit of twisting its neck, with a slow undulatory motion, turning its head back and closing its eyes, whence its common name. The nest is merely the rounded bottom of a cavity or hole in a tree, which the bird adapts to its purpose by means of its bill. The eggs, seven or eight, are pure white, ten-twelfths long, seven-twelfths in breadth.

Emmet-hunter. Long-tongue. Cuckoo's maid or mate. Snake-bird. Turkey Bird. Barley Bird.

Yunx Torquilla, Linn. Syst. Nat. i. 172.—Yunx Torquilla, Temm. Man. d'Ornith. i. 403.—Yunx Torquilla, Wryneck, MacGillivray, Brit. Birds, i. 100.

The beautiful, very extensive, and generally distributed family of Pigeons, appears to form an order of itself, separated by well defined limits. Some have considered it as belonging to the Rasores or Gallinaceous Birds, others as belonging to the Insessores or Perchers. In my opinion it belongs to neither.

ORDER XI. GEMITRICES. COOERS.

The birds of this order vary much in form, some having the body full, others rather slender; but this difference is more dependent upon the elongation of the wings and tail, than upon the actual form of the body, which is generally rather full, while the neck is moderate, and the head always small, oblong, compressed, with the forehead rounded. Bill short or of moderate length, straight, generally slender; upper mandible having the nasal membranes large, bare, fleshy, tumid, scurfy, and by their approximation obliterating the ridge, the extremity horny, arched or convex, more or less compressed, the tip blunt and thin-edged. Mouth narrow, but extensile, the crura of the lower mandible being slender and elastic; tongue fleshy, triangular, pointed; œsophagus of moderate width, but presently dilated into a very large crop, formed of two lobes, and lying across the neck and fore part of the breast; proventriculus oblong; stomach a powerful gizzard, of a somewhat rhomboidal form, with very large muscles, radiated tendons, and dense epithelium, having two thick, elliptical, transversely rugous plates; intestine long and slender; cœca very small, cylindrical; rectum very short. Tarsi generally short and stout, either scutellate or feathered; toes four, on the same level, the hind toe shorter than the lateral, all scutellate, laterally margined, flattened beneath; claws short, compressed, moderately arched, rather blunt. Plumage various; feathers without accessory plumule; wings large, more or less pointed; tail various.

These birds feed on vegetable substances, some chiefly on soft fruits, others on nuts, seeds of grasses, and other hard fruits, which they swallow entire, some again on the herbaceous parts of plants. They walk with ease, and even celerity; have a strong, rapid, and protracted flight; nestle on trees, bushes, rocks, the ground, or in holes, and lay two elliptical, pure white eggs. The young, at first scantily covered with soft down, are fed with substances previously softened in the crop of the parent bird, from whose mouth they receive it by introducing their bill.

FAMILY XXVIII. COLUMBINÆ. COLUMBINE BIRDS, OR PIGEONS.

There being only the single family of Columbinæ in the order Gemitrices, the characters of the family and order are the same. The variations in the form of the wings and tail, as well as other circumstances, give rise to a number of generic distinctions. The four species which occur in Britain belong to the genus Columba. A solitary individual of an American species has also been adduced, belonging to the genus Ectopistes, and as others have been met with on the Continent, it may be admitted.

GENUS LXXVI. COLUMBA. DOVE.

Bill rather short, slender, straight, compressed; upper mandible having at the base two soft, tumid, bare substances, placed over the nostrils, the dorsal line straight for half its length, arcuato-declinate toward the end, the sides convex, the tip obtuse and thin-edged; lower mandible at its base wider than the upper, its crura slender and elastic, the angle long, the dorsal line short and slightly convex, the tip obtuse. Mouth narrow; tongue sagittate, narrow, tapering to a point; œsophagus immediately dilated, and soon after expanded into a very large double or two-lobed crop,

afterwards narrow; stomach a powerful gizzard of a somewhat rhomboidal form, with very large muscles; intestine long and slender; cœca very small, cylindrical. Nostrils linear, direct, in the lower and fore part of the bare fleshy nasal membrane. Eyes of moderate size; eyelids generally bare. Head oblong, small, compressed; neck rather short, body compact, full. Legs short, rather strong; tarsi very short, roundish, anteriorly scutellate, behind scurfy; toes of moderate size; the first about half the length of the third, the lateral nearly equal; all free, marginate, with numerous short scutella; claws short, arched, compressed, rather acute. Plumage various; the feathers with extremely short tubes, and thick spongy shafts, without plumule; wings long, broad, rather pointed, of about twenty-four quills, the second quill longest; tail generally moderate, even or rounded in various degrees, of twelve broad feathers.

Four species of this genus are found in Britain. Of these, three are permanently resident, while the other, the Turtle Dove, is a summer visitant.

146. Columba Palumbus. Ringed Dove, or Cushat.

Plumage of the upper parts greyish-blue; wings and scapulars tinged with brown; hind part and sides of the neck bright green and purplish-red, with two cream-coloured patches; fore part of neck and breast light reddish-purple; a white patch on the wings, including the four outer secondary coverts.

Male, $18\frac{1}{2}$, 31, $10\frac{1}{2}$, 1, $1\frac{2}{12}$, $1\frac{4}{12}$, $\frac{6}{12}$. Female, 17, 30.

This species is generally dispersed over the wooded and cultivated parts of Britain and Ireland. It feeds on seeds of wheat, barley, oats, leguminous plants, field mustard and charlock, beech-mast, acorns, grasses, blades of clover, and leaves of the turnip. In winter it appears in large flocks, sometimes composed of many hundred individuals. It reposes on the branches of tall trees, especially beech, ash, and pine, in hedgerows, avenues, or plantations; places its nest also on trees, forming it of twigs loosely put together, in a circular form, and nearly flat above; and lays two oval, pure white, glossy eggs, an inch and seven-twelfths in length, an inch and two-twelfths in breadth. In fine weather it basks in the sun, on dry banks, or in the open fields, rubbing itself in the sand or soil. The male in spring struts and cooes, rises in the air, strikes the points of his wings against each other, descends,

rises again, and performs various gambols. The cry of this species resembles the syllables coo-roo-coo-coo, the two last protracted. Its flight is strong, light, and rapid. As an article of food it is not much esteemed. Attempts to domesticate this species have never proved successful.

Ring Dove. Wood Pigeon. Cushat, Quest, or Cushie.

Columba Palumbus, Linn. Syst. Nat. i. 282.—Columba Palumbus, Temm. Man. d'Ornith. i. 444.—Columba Palumbus, Ringed Dove or Cushat, MacGillivray, Brit. Birds. i. 259.

147. Columba Œnas. Blue-backed or Stock Dove.

Plumage of the male greyish-blue; the sides and back of the neck splendent with green and purplish-red, the lower part brownish purple-red, or vinaceous; back and lower wing-coverts blue; two short bands of black on the wing, one being on the three inner secondary quills, the other on three of the secondary coverts; bill light brown. Female similar, but with the green of the neck less extended, the purplish-red paler.

Male, 14, 26, $9\frac{1}{2}$, $\frac{10}{12}$, $1\frac{3}{12}$, $1\frac{2}{12}$, $\frac{5}{12}$. Female, $13\frac{1}{2}$, 26.

This species, which is about the same size as the Rock Dove, but from which it is distinguished by having the rump blue, in place of being white, occurs in various parts of England, residing in woods, and searching the fields for seeds and other vegetable substances. Mr Salmon states, that in the neighbourhood of Thetford, in Norfolk, it breeds in rabbit-burrows. Others inform us that it usually nestles in a hole of a decayed tree, or on a stump or pollard. This and the next species were very generally confounded by the older writers, and the present was held to be the original of our domestic pigeons, for which reason it was called Stock Dove; others say it obtained that name because it breeds on stocks.

Stock Dove. Wood Dove.

Columba Œnas, Temm. Man. d'Ornith. ii. 445.—Columba Œnas, Blue-backed Dove, MacGillivray, Brit. Birds, i. 287.

148. Columba Livia. White-backed or Rock Dove.

Plumage of the male light greyish-blue; the neck splendent with green and purplish-red; the middle of the back and the lower wing-coverts white; two black bands on the wing, one on the six inner secondary quills, the other on the secondary coverts; bill brownish-black. Female similar, but with the green and purple of the neck less extended.

Male, 14, 27, $9\frac{3}{4}$, $\frac{10}{12}$, $1\frac{2}{12}$, $1\frac{2}{12}$, $\frac{5}{12}$. Female, $13\frac{1}{2}$, $26\frac{1}{2}$.

The Rock Dove, which is the original of our domestic species, occurs abundantly in the Hebrides, Shetland, and Orkney Islands, and along the rocky shores of the northern parts of Scotland, less plentifully here and there on the coasts of other parts of Britain, as well as in Ireland. It resides in caves and crevices of rocks; feeds in the pastures and fields on seeds of various kinds; has a very rapid flight, walks gracefully and with celerity; is gregarious in winter and spring, and breeds several times each year. The male struts and cooes like the domestic pigeon. The nest, rudely composed of small twigs, grass, and other materials, is placed in a sheltered part of the rocks. The eggs, always two, elliptical, pure white, glossy, measure an inch and seven-twelfths in length, an inch and two-twelfths in breadth. Young birds taken from the nest are easily reared, and become domestic; tame pigeons sometimes associate with the wild individuals, and even breed with them; and tame pigeons, becoming wild, and resorting to the rocks or to old buildings, gradually assume the appearance of the wild rock doves. The flesh of this bird is superior in flavour to that of the Wood Pigeon, but generally more tough.

Wild Pigeon or Dove. Rock Pigeon or Dove.

Columba Livia, Temm. Man. d'Ornith. ii. 447.—Columba Livia, White-backed, or Rock Dove, MacGillivray, Brit. Birds, i. 268.

149. Columba Turtur. Turtle Dove.

Male with the head light bluish-grey, the back greyish-brown, the scapulars and small wing-coverts black with broad light red margins, the breast pale greyish-purple, the neck with two large black spots barred with white, the quills and tail greyish-brown, the latter tipped with white. Female similar, but with the tints duller.

Male, $11\frac{2}{12}$, 21, 7, $\frac{8}{12}$, $\frac{10}{12}$, $\frac{10}{12}$, $\frac{3}{12}$.

Somewhat more slender in its form, yet not much so, this species has by some authors been referred to a genus apart from the three pigeons above described. It arrives in England in the end of spring, and disperses over many of the southern and eastern counties. A few individuals have been seen in Scotland. Its habits are similar to those of the Wood Pigeon. The eggs, two in number, are white, glossy, ovate, somewhat pointed, an inch and a quarter in length, ten-twelfths in breadth. According to Montagu, the young have no black

feathers on the neck the first year. This species is different from that usually kept in cages or aviaries, and which bears the same name.

Turtle. Ring-necked Turtle.

Columba Turtur, Linn. Syst. Nat. i. 284.—Columba Turtur, Temm. Man. d'Ornith. ii. 448.—Columba Turtur, Turtle Dove, MacGillivray, Brit. Birds, i. 291.

GENUS LXXVII. ECTOPISTES. PASSENGER PIGEON.

Bill of moderate length, straight, rather slender, broader than high at the base, compressed toward the end; upper mandible with a tumid fleshy basal covering. Mouth narrow; œsophagus dilated into a very large crop; stomach a strong gizzard; intestine long and narrow; cœca very small. Nostrils linear. Eyes of moderate size. Head small, oblong; neck of moderate length; body rather slender. Feet short; tarsus as short as the hind toe and claw, anteriorly scutellate; outer toe slightly shorter than the inner; claws rather short, stout, arched, obtuse. Plumage compact, blended but firm beneath; wings long, the first and second quills longest; tail long, cuneate, pointed, of twelve or fourteen feathers.

150. Ectopistes migratoria. Long-tailed Passenger Pigeon.

Tail of twelve feathers. Male with the upper part and sides of the head light blue; throat, fore neck, and breast, light brownish-red; sides and lower wing-coverts light blue; abdomen and lower tail-coverts white; upper parts greyish-blue; lower part of neck behind and along the sides changing to gold, emerald-green, and rich crimson; some of the wing-coverts with a black spot; quills and larger coverts blackish-brown; primaries edged with blue at the base, with reddish-white toward the end; middle tail-feathers bluish-black, the rest pale blue at the base, with a patch of red and a band of black on the inner web, white in the rest of their extent. Female with the tints much duller.

Male, $16\frac{1}{4}$, 25, $8\frac{1}{2}$, $\frac{8}{12}$, $\frac{11}{12}$, $1\frac{1}{12}$, $\frac{4}{12}$. Female, 15, 23.

This species is abundantly dispersed over North America. Dr Fleming, in his History of British Animals, gives an account of an individual, which "was shot while perched on a

wall in the neighbourhood of a pigeon-house at Westhall, in the parish of Monymeal, Fifeshire, 31st December 1825. The feathers were quite fresh and entire, like those of a wild bird. I owe the possession of the specimen to the ornithological zeal and attention of the Rev. A. Esplin, schoolmaster of Monymeal." It does not appear that another individual has been met with in Britain or Ireland; but M. Temminck states that the species has occurred in Norway and Russia.

Columba migratoria, Linn. Syst. Nat. i. 285—Ectopistes migratoria, Audubon Synops. 194; Ornith. Biogr. i. 319.

ORDER XII. RADRICES. SCRAPERS.

The only general character distinctive of every species belonging to this group, is one derived from the digestive organs. A very large dilatation of the œsophagus, forming a crop, lying when distended equally on both sides of the neck, and such an enlargement of the cœca as to render their capacity at least half of that of the intestine, occur together in no other birds. It is very difficult to assign general characters of any other kind to them; but they may be described as follows:

Body large and full; neck of moderate length; head oblong, rather small. Bill short, with the upper mandible arched, transversely concave, its edges overlapping, the tip blunt. Mouth of moderate width, or rather narrow; tongue short, triangular, flat above; œsophagus narrow, but expanded into a very large subglobose crop; proventriculus oblong; stomach a powerful gizzard, of which the muscles are very large, the tendons radiated, the epithelium forming two thick, elliptical, transversely rugous plates, opposite the muscles, but in the other parts thinner; intestine long and rather wide; cœca extremely

large, with prominent internal longitudinal or reticulated rugæ. Nostrils basal, operculate, small. Eyes rather small, or moderate. Legs generally strong; tarsi of moderate length, or short, scutellate or feathered, in the former case sometimes having a spur or knob behind; three anterior spreading toes, often also a hind toe, which is always small and elevated; claws moderately arched, depressed, obtuse. Plumage full, the feathers with a large plumule; wings generally concave, short, or moderate, tail various.

Representatives of this order are found in all parts of the world. In Britain the species are not numerous, there being only eight. They feed on seeds, berries, hard fruits, buds, twigs, and herbaceous plants, occasionally insects and worms; run with great celerity; have a strong, rapid, and continued, though generally heavy flight; nestle on the ground, and lay numerous eggs. The young, born with their eyes open, and their body covered with close stiffish down, are able to run about presently after exclusion. They are led about by their mother, who manifests the greatest anxiety for their welfare, protects them from cold and wet under her wings, feigns lameness to draw intruders after her, while they remain concealed among the herbage, and points out to them the substances on which they are to feed. Many of these birds scrape up the dry leaves and earth with their feet in search of food; but the habit is not general.

FAMILY XXIX. PHASIANINÆ. PHASIANINE BIRDS, OR PHEASANTS.

Birds of large size, having the body full, the neck slender and rather long, the head small and oblong.

Bill short, strong, slightly decurved; upper mandible with the dorsal line sloping at the base, arcuato-declinate toward the end, the sides convex, the tip rounded and thin-edged. Mouth rather narrow; palate flat, with two curved, longitudinal, slightly papillate, soft ridges; tongue of moderate size, fleshy, tapering, slightly concave above, horny beneath; œsophagus narrow, but enlarged into a crop of great size, lying over the fore part of the neck and thorax; stomach a powerful gizzard of a subrhomboidal form, with very large muscles, radiated tendons, and dense epithelium, having two thickened, roundish, grinding surfaces; intestine long, rather wide; cœca very long, wider than the intestine; rectum long, cylindrical. Nostrils linear-oblong. Eyes of moderate size. Legs of moderate length, strong; tarsus stout, a little compressed, anteriorly with two series of alternating scutella, posteriorly also with two series, and generally a conical spur; toes four, strong, the first very small and elevated, the anterior connected by basal webs; claws slightly arched, rather blunt. Plumage various; wings short, broad, rounded, curved, the third and fourth quills longest; feathers on the rump elongated; tail long, graduated, or rounded, sometimes even or emarginate, of more than twelve feathers.

The Phasianinæ pass gradually into the Perdicinæ, there being no real distinction between them. Only one species of this family occurs in Britain, and even it is not indigenous.

GENUS LXXVIII. PHASIANUS. PHEASANT.

Bill short, strong, slightly decurved, higher than broad at the base, depressed at the end. The other characters as above. Plumage various, the feathers generally ovate or oblong, on the head and neck of the males splendent; eyelids bare; a large space surrounding them, and extending along the whole side of the head to the bill, also bare, and

covered with small cutaneous papillæ, intermixed with small plumules; wings short, broad, convex, rounded; the secondary quills nearly as long as the primary; tail long, graduated, slightly curved, of eighteen tapering feathers.

151. PHASIANUS COLCHICUS. COLCHIAN PHEASANT.

Male with the head and upper part of the neck of various tints of green and blue; the lower part of the neck and the sides yellowish-red, the feathers terminally margined with dark blue; those of the fore part of the back and the scapulars having three bands of yellowish, black, and red, parallel to the edges. Female with the plumage greyish-yellow, variegated with black and brown. In a variety called the *Ring-necked Pheasant*, the colours are similar, but generally somewhat lighter, and on the neck is a white band, extending along two-thirds of its circumference, narrow behind, broader at the two extremities. In another, the *Bohemian Pheasant*, the ground colour of the plumage, excepting that of the head, upper part of the neck, and middle of the breast, is pale reddish-grey, or cream-colour, deeper and more glossy on the fore neck. Individuals are often white or of various colours.

Male, 34, 32, 10, $1\frac{4}{12}$, $3\frac{2}{12}$, $2\frac{1}{4}$, $\frac{8}{12}$. Female, 26, 30.

The Pheasant, although not indigenous, is now generally dispersed in Britain and Ireland, being nourished in preserves, and in some measure naturalized, although it could not subsist with us were it left to its own resources. The males generally keep by themselves in winter, and in spring separate, each selecting a particular spot, where he struts, and invites the females by crowing and clapping his wings. The female deposits her eggs in a slight hollow, scantily lined with dry leaves. They are from six to ten in number, an inch and ten-twelfths long, an inch and five-twelfths in breadth, pale greenish-brown, or greyish-white, or yellowish-grey. Instances of crossing between the Pheasant and domestic fowl, and more rarely the Black Grouse, occur; and sometimes the female assumes the plumage of the male.

Common Pheasant. Ring-necked Pheasant. Bohemian Pheasant.

Phasianus colchicus, Linn. Syst. Nat. i. 270.—Phasianus colchicus, Temm. Man. d'Ornith. ii. 453.—Phasianus colchicus, Common Pheasant, MacGillivray, Brit. Birds, i. 114.

FAMILY XXX. PERDICINÆ. PERDICINE BIRDS, OR PARTRIDGES.

Birds of small or moderate size, having the body full, the neck short, or moderate; the head rather small and oblong; bill short, stout, broader than high at the base; upper mandible with its dorsal line at first straight, then arcuato-declinate, the edges sharp and overlapping, the tip sharp-edged and rounded; lower mandible narrower, with the dorsal line slightly convex, the edges involute, the tip narrowed but obtuse; gape-line arched. Both mandibles internally concave; tongue short, triangular, flat above, and acute; mouth rather narrow; œsophagus narrow, but opening into a very large globular crop; proventriculus bulbiform; stomach a powerful, roundish, compressed gizzard, with strong muscles, radiated tendons, and dense, longitudinally rugous epithelium; intestine of moderate length; cœca very large, oblong, internally ridged. Nostrils oblong, operculate, in a rather broad feathered membrane. Eyes of moderate size. Legs short or moderate; tarsus with a double row of scutella before, plain or spurred behind; toes rather strong, scutellate, three before, one behind, very small or sometimes wanting; claws rather strong, arched, obtuse. Plumage full, the feathers with large plumules; wings short, broad, concave, rounded; tail of twelve or more feathers, generally short, and even or rounded.

There is little essential difference between the large, long-tailed birds, called Cocks and Pheasants, and the small, short-tailed species called Partridges and Quails. Their habits also are essentially similar. The Partridges are generally distributed, but more abundant in the temperate and warmer regions. One species is plentiful in Britain, another rare and migratory, and two partially naturalized.

GENUS LXXIX. PERDIX. PARTRIDGE.

Bill short, strong, slightly curved; upper mandible having its dorsal line arcuato-declinate, the edges arched, the tip blunt; lower mandible with its dorsal line slightly convex, the edges erect or slightly involute, the tip rounded. Mouth rather narrow; tongue short, triangular, flat above, fleshy, horny beneath, acute; œsophagus narrow, with a large crop; proventriculus bulbiform; stomach roundish, with very large muscles, and dense, longitudinally rugous epithelium; intestine long, rather wide; cœca very long, narrow at the commencement, enlarged, and somewhat oblong. Nostrils basal, lateral, circular behind, linear before, operculate, the nasal groove very broad and feathered. Eyes rather small, eyelids feathered; a narrow space beneath the lower, and a larger space behind the eye and over the ear bare. Head small, oblong, forehead rounded; neck short; body full and large. Tarsus short, stout, moderately compressed, with two anterior series of scutella, the males generally with a knob behind; toes rather stout, the first very short and elevated, the inner considerably shorter than the outer, the anterior webbed at the base; claws stout, short, depressed, with convex ridge, sloping sides, and blunt point. Plumage full, the feathers oblong; wings very short, broad, curved, rounded, the fourth and fifth quills longest; tail short, rounded, generally of sixteen feathers.

152. Perdix rubra. Red Partridge.

Bill and feet bright red; upper parts reddish-brown, tinged with grey; forehead ash-grey; throat and cheeks white; a black band from the bill to the eye, and thence down the neck, becoming broader on its fore part, which is spotted with the same colour; lower parts ash-grey and light red; sides transversely banded with ash-grey, white, black, and red; tarsus of the male with a large flat tubercle.

Male, 14, 21, $6\frac{1}{4}$, $\frac{8}{12}$, $1\frac{7}{12}$, $1\frac{1}{2}$, $\frac{5}{12}$. Female, 13.

This species, which is common in Spain, Portugal, Italy, and the south of France, has been introduced into England, in some of the southern parts of which it is now not uncommon. It is said to prefer waste heathy ground to corn-fields, and to afford less sport than the common species, as it runs

before the dogs, the individuals composing a covey dispersing, and rising one after another.

Red-legged Partridge. Guernsey Partridge. French Partridge.

Perdix rubra, Temm. Man. d'Ornith. ii. 485.—Perdix rubra, Red Partridge, MacGillivray, Brit. Birds, i. 215.

153. Perdix cinerea. Grey Partridge.

Male with the bill and feet greyish-blue; upper parts minutely barred with ash-grey, yellowish-brown, brownish-black, and brownish-red; scapulars and wing-coverts darker, with longitudinal whitish streaks; forehead, cheeks, and throat light red; neck ash-grey, minutely undulated with black; sides broadly banded with brownish-red, of which there is a large patch on the breast. Female similarly coloured, but with the upper parts more brown, their markings larger, the top of the head streaked with yellowish, and the spot on the breast smaller.

Male, $12\frac{1}{2}$, 20, $6\frac{1}{2}$, $\frac{8}{12}$, $1\frac{5}{12}$, $1\frac{3}{12}$, $\frac{5}{12}$. Female, 12, 19.

Generally distributed, and permanently resident, the Grey Partridge, although not peculiar to cultivated land, thrives best in those parts which are most extensively covered with crops. It is fond of rambling into waste or pasture grounds, which are covered with long grass, furze, or broom; but it seldom enters woods, and never perches on trees. Its flight is direct, performed by rapid flaps, producing a whirring noise. It runs with great speed; feeds on grass, corn, grain, pease, field beans, seeds of various plants, insects, pupæ, and larvæ; and reposes at night on the ground, generally in an open place. In winter the Partridges keep in coveys, but separate and pair early in spring. The nest is a slight hollow, with some straws; the eggs from ten to fifteen, are pale greenish or yellowish-brown, an inch and a half long, an inch and a twelfth in breadth.

Common Partridge.

Tetrao Perdix, Linn. Syst. Nat. i. 256.—Perdix cinerea, Temm. Man. d'Ornith. ii. 488.—Perdix cinerea, Grey Partridge, MacGillivray, Brit. Birds, i. 218.

GENUS LXXX. COTURNIX. QUAIL.

Bill very short, compressed; upper mandible with its dorsal line sloping at the base, then arcuato-declinate, the edges direct, arched, the tip very narrow; lower mandible with its

dorsal line straight. Head entirely feathered. Tarsi short, compressed, stout, anteriorly covered with two series of scutella, posteriorly with two series of scales, but without spur or tubercles; toes rather slender, slightly marginate; claws slender, short, compressed, slightly arched. Wings with the first quill scarcely shorter than the second; tail extremely short, much rounded, the feathers weak and decurved.

The Quails differ from the Partridges chiefly in having the head entirely feathered, the wings straighter and more pointed, with the secondary quills shorter, the tail much smaller, so as to be concealed by the neighbouring feathers, and decurved. The males are said to be polygamous, and extremely pugnacious.

154. Coturnix dactylisonans. Wandering Quail.

Upper parts variegated with reddish-grey, and brownish-black, and marked with whitish longitudinal pointed streaks, of which are three bands on the head. Male with the throat dark brown, and a double interrupted black band on the fore neck. Female with the throat yellowish-grey.

Male, 8, 14, $4\frac{1}{4}$, $\frac{5}{12}$, $1\frac{1}{12}$, $\frac{10}{12}$, $\frac{3}{12}$. Female, $7\frac{1}{2}$.

The Quail is extensively distributed over Asia, Africa, and Europe, being in some regions stationary, in others migratory. In England it arrives about the middle of May, and departs in September; but instances have occurred of its remaining in winter both in England and in Ireland. It is not common anywhere, and is very seldom met with in Scotland. Its food consists of seeds, herbage, and occasionally insects; and its haunts are chiefly the cultivated fields and pastures. The males are extremely pugnacious, and said to be polygamous. The nest is a slight hollow, and the eggs, from twelve to twenty, are reddish-yellow, yellowish-white, or greenish-grey, marked all over with dark brown spots and blotches. It is believed that this is the species which afforded the Israelites the miraculous supply of flesh in the desert.

Tetrao Coturnix, Linn. Syst. Nat. i. 278.—Perdix Coturnix, Temm. Man. d'Ornith. ii. 491.—Coturnix dactylisonans, Common Quail, MacGillivray, Brit. Birds, i. 233.

GENUS LXXXI. ORTYX. COLIN.

Bill very short, strong, compressed; upper mandible having its dorsal line much arched, the sides convex, the tip

blunt; lower mandible with its dorsal outline convex. A bare space behind the eye. Tarsi short, strong, anteriorly covered with two series of scutella, posteriorly with two series of scales, but without spur or tubercle. Toes rather long, stout, compressed, arcuato-declinate. Wings short, much rounded, the third, fourth, fifth, and sixth quills longest; tail of moderate length, much rounded.

The Colins, which are peculiar to America, are intermediate between the Partridges and Quails, from which they are readily distinguished by the form of their bill. One species has been partially naturalized in England.

155. Ortyx Virginiana. Virginian Colin.

Male with the upper parts brownish-red, variegated with black; throat and a broad band over the eye white, loral space and a broad band passing down the neck and crossing it in front, black; lower parts greyish-white, undulated with black. Female with lighter tints, the throat and a band over the eye, light yellowish-red. Young with the feathers of the upper parts having a central yellowish line, the lower parts dull yellowish-brown, without black bands.

Male, 10, 15, $4\frac{8}{12}$, $\frac{7}{12}$, $1\frac{2}{12}$, $1\frac{2}{12}$, $\frac{4}{12}$. Female, $9\frac{1}{2}$, 14.

Abundant in North America, from Mexico to Massachusetts. Has been introduced into England, and naturalized in some of the southern counties.

Virginian Partridge. Northern Colin.

Tetrao Virginianus, Linn. Syst. Nat. i. 277.—Perdix borealis, Temm. Man. d'Ornith. iv. 335.—Ortyx virginiana, Virginian Colin, MacGillivray, Brit. Birds, i. 228.

FAMILY XXXI. TETRAONINÆ. TETRAONINE BIRDS, OR GROUSE.

The birds of which this family is composed, differ as little from the Perdicinæ, as the latter from the Phasianinæ. Some of them are of large size, others very small. They are generally bulky, with the body very full, the neck of moderate length, the head oblong and small. Bill short, stout, with the upper mandible convex, thin-edged, destitute of notches, its tip obtuse; lower mandible with

the dorsal line slightly convex, the edges erect, the tip rounded. Tongue triangular, pointed; œsophagus with an excessively large crop; stomach a very powerful gizzard, having the muscles extremely large, the epithelium with two thick concave grinding surfaces; intestine long and wide; cœca excessively elongated, cylindrical, with internal longitudinal ridges, and of greater capacity than the intestine. Feet short, stout; tarsus partially or entirely feathered; toes bare or feathered; hind toe small and elevated; claws moderate or long, arched, obtuse. Plumage full, feathers with a large plumule; wings rather short, convex, rounded; tail of more than twelve feathers. A bare papillate fringed membrane over the eye, and a bare space on each side of the neck, usually concealed.

These birds belong chiefly to the arctic and temperate regions. They feed on twigs, buds, and herbage; run with great speed, and have a direct, heavy, but rapid flight. The males in many species are polygamous and combative. The nest is placed on the ground, the eggs are numerous and spotted, and the young covered with stiffish down. Four species occur in Britain.

GENUS LXXXII. TETRAO. GROUSE.

Bill short, strong, slightly curved; upper mandible with its dorsal line nearly straight at the base, toward the end arcuato-declinate, the ridge convex, the sides rounded, the edges sharp and overlapping, the tip thin-edged and rounded; lower mandible narrower, with the angle broad, the dorsal line slightly convex, the back broadly convex, the sides convex, the edges erect, the tip rounded; gape-line arched. Mouth narrow; tongue short, triangular, flat above, pointed; œsophagus narrow, with a very large crop; stomach a powerful gizzard, of a roundish form; intestine long, rather wide; cœca extremely long, wider than the intestine, and of greater capacity. Nostrils basal, lateral, oblong, operculate, concealed by the short feathers of the nasal membrane. Eyes

of moderate size; eyelids feathered; over the upper a semilunar space of bare, papillate, fringed skin. Head small, oblong; neck moderate; body very full and large. Legs rather short, strong; tarsi covered with feathers anteriorly and on the side; toes rather small and slender; the first small and elevated, all scutellate, with a marginal series of linear, flattened, obtuse scales, projecting like the teeth of a comb; claws rather short, strong, arched, with the sides sloping, the edges thin, the tip obtuse. Plumage full, close, compact; wings short, broad, curved, much rounded; tail of sixteen or eighteen feathers, varying in form.

The Grouse, of which only two species exist in Britain, are generally strong, heavy birds, which live on vegetable substances, generally collecting their food on the ground, but sometimes also on trees. They have a strong, often rapid and protracted flight, walk and run with agility, nestle on the ground, lay numerous spotted eggs, and are in great request as objects of sport and food.

156. TETRAO UROGALLUS. WOOD GROUSE, OR CAPERCAILZIE.

Male with the tail rounded; the upper parts minutely undulated with grey and black; the throat, lower part of fore neck, and fore part of breast, black, the tips of the feathers glossy dark green; the lower wing-coverts and feathers under the tail white. Female variegated with yellowish-red, white, and brownish-black.

Male, 34, 52, 16, 2, 3, 2½, $\frac{10}{12}$. Female, 28.

This magnificent bird was formerly a native of the pine forests of the middle and northern divisions of Scotland. The last individual recorded as killed near Inverness, was seen by Mr Pennant in 1769. Of late, individuals have been introduced from Scandinavia, where it is plentiful, and, it is said, have succeeded in the woods of the Marquis of Breadalbane, in Perthshire; so that the species may now rank as naturalized.

Cock of the Woods. Great Wood Grouse. Capercailzie.

Tetrao Urogallus, Linn. Syst. Nat. i. 273.—Tetrao Urogallus, Temm. Man. d'Ornith. ii. 457.—Tetrao Urogallus, Wood Grouse, MacGillivray, Brit. Birds, i. 138.

157. TETRAO TETRIX. BLACK GROUSE.

Male with the tail much forked, the four lateral feathers on

each side elongated and curved outwards; the general colour of the plumage black, the neck and back glossed with deep blue; the lower wing-coverts, lower tail-coverts, and bases of the secondary quills, white. Female with the tail slightly forked, its lateral feathers straight; the general colour yellowish-red, spotted and undulated with brownish-black.

Male, 23, 33, 10, 1, $2\frac{1}{4}$, 2, $\frac{6}{12}$. Female, 18, 31.

The Black Grouse is pretty generally distributed in Scotland, in many parts of which it is very abundant. It also occurs in various parts of England and Ireland. The males separate from the rest in autumn, and keep apart until toward the middle of spring, when they engage in combats with each other, and assume particular stations, where they strut and invite the females with a loud harsh cry. The nest, composed of grass and twigs, is placed on the ground, in shelter of some low bush, or among rank grass. The eggs, from five to eight or ten, are of a regular oval shape, two inches long, an inch and seven-twelfths in breadth, yellowish-white, or pale reddish-yellow, irregularly spotted and dotted with brownish-red or blackish-brown. The males leave the females during incubation. The food of this species consists in spring of twigs and catkins of alder, birch, and willow; in summer, of tops of heath, Vaccinium Myrtillus, and Empetrum nigrum; in autumn, of heath, crowberries, cranberries, blaeberries, and whortleberries; in winter, of tops and buds of these plants and of fir; but at all seasons its staple food is heath and vaccinia. Sometimes it makes excursions into the corn fields, in search of seeds of the cereal plants. The flesh of this bird is lighter than that of the Red Grouse, especially the smaller pectoral muscles, which are nearly as light-coloured as those of a Pheasant. Being in great request, great numbers are annually killed. It has been known to breed with the Pheasant and Red Grouse.

Black Game. Black Cock. Grey or Brown Hen.

Tetrao Tetrix, Linn. Syst. Nat. i. 272.—Tetrao Tetrix, Temm. Man. d'Ornith. ii. 460.—Tetrao Tetrix, Black Grouse, MacGillivray, Brit. Birds, i. 145.

GENUS LXXXIII. LAGOPUS. PTARMIGAN.

Bill short, strong, slightly curved; upper mandible with its dorsal line arcuato-declinate, the ridge convex, the sides rounded, the edges sharp and overlapping, the tip thin-edged and rounded; lower mandible narrower, with the angle

broad, the dorsal line straight, the back broadly convex, the sides nearly erect and convex, the edges erect, the tip rounded; gape-line arched. Mouth narrow; tongue short, triangular, flat above, pointed; œsophagus narrow, with a very large crop; stomach a powerful gizzard, of a roundish form; intestine long, rather wide; cœca extremely long, cylindrical, wider than the intestine, and of greater capacity. Nostrils basal, lateral, oblong, concealed by the short feathers of the nasal membrane. Eyes of moderate size, eyelids feathered, over the upper a semilunar space of bare papillate, fringed, skin. Head small, oblong; neck short; body full and large. Legs rather short; tarsi feathered, as are the toes, which are rather small, the first very short and elevated, all with a few terminal scutella, and the anterior webbed at the base; claws rather long, arched, depressed, with the sides sloping, the edges thin, the tip obtuse. Plumage full, close, compact; wings short, broad, curved, much rounded; tail short, broad, slightly rounded, of from twelve to sixteen feathers.

The Ptarmigans differ from the Grouse chiefly in having the toes and tarsi feathered, and the former destitute of lateral linear scutella. They belong to the coldest regions, and are remarkable for becoming white in winter, excepting one species, which is peculiar to the British Islands.

158. Lagopus Scoticus. Brown Ptarmigan.

Adult male in winter chestnut-brown, inclining to red on the neck, on the body variegated with black, on the breast blackish, with many of the feathers tipped with white. Female in winter yellowish-red, spotted and barred with black. Male in summer chestnut-brown, minutely barred and spotted with black, the head and neck also barred, the breast darker and more obscurely barred. Female yellowish-red, spotted and barred with black. Young with the upper parts brownish-black, each feather edged and barred with yellowish-red; lower parts yellowish-grey, barred with brownish-black, tarsi yellowish-grey.

Male, 16, 28, $8\frac{1}{2}$, $\frac{10}{12}$, $1\frac{1}{2}$, $1\frac{1}{4}$, $\frac{8}{12}$. Female, $15\frac{1}{4}$, 25.

This species, commonly named the Red Grouse, occurs in great abundance in all the extensive heathy tracts of Scotland, England, and Ireland. When not much molested, which,

however, is now seldom the case, several families unite into packs in the end of autumn, and continue together until the middle of spring, when they separate and pair. The male remains with the female until the young are able to shift for themselves. The nest is generally a slight hollow, with some twigs and straws, among the heath or herbage of the moors. The eggs, from eight to twelve, are of a regular oval form, an inch and seven-twelfths long, an inch and three-twelfths across, yellowish-white, pale yellowish-grey, or brownish-yellow, thickly clouded, blotched, and dotted with blackish, umber, or reddish-brown. The young leave the nest soon after they are hatched, and are led about by their parents, who manifest great anxiety in their behalf. The ordinary food of this species consists of the tender twigs and leaves of Erica cinerea and Calluna vulgaris, as well as of Vaccinium Vitis idæa, and other small shrubs, together with herbaceous plants and berries, along with which they swallow particles of quartz. Its flight is direct, heavy, but on occasion rapid; it runs with great celerity, conceals itself by squatting, and is not readily raised. The male emits a loud chuckling cry, resembling the syllables cock-cock, several times repeated. The flesh of this species being very highly esteemed, great havoc is committed among it; but, as the shooting-season is limited by law, and the birds carefully preserved during the rest of the year, it still continues abundant. This bird being, in so far as is known, peculiar to the British Isles, it has been proposed, I think by Mr Neville Wood, to name it accordingly. This circumstance, however, would not of itself justify the proposed adoption of the specific epithet *Britannicus* for *Scoticus*, by which it has hitherto been distinguished, were it not that our other species appears to be absolutely confined to Scotland, and therefore peculiarly to merit the epithet *Scoticus*. Should I succeed in proving this to be the case, I would then propose naming our common Red Grouse *Lagopus Britannicus*, the British Ptarmigan; and our common Ptarmigan *Lagopus Scoticus*, the Scottish Ptarmigan.

Red Game. Red Grouse. Red Ptarmigan. Muir-fowl. Moor-fowl. Moor-cock and hen. Gor-cock.

Tetrao Scoticus, Lath. Ind. Ornith. ii. 641.—Tetrao Scoticus, Temm. Man. d'Ornith. ii. 450.—Lagopus Scoticus, Brown Ptarmigan, or Red Grouse, MacGillivray, Brit. Birds, i. 169.

159. Lagopus cinereus. Grey Ptarmigan.

Male in winter white, with a black band from the bill to

the eye, the tail-feathers greyish-black, based and tipped with white, the shafts of the primaries brown. Female in winter white, the feathers between the bill and the eye black at the base only, the tail-feathers brownish-black, based and tipped with white, the shafts of the primaries brown.

In spring, both sexes white, mottled with dark grey and yellow feathers, which are barred with black; the wings, lower parts, and tail, as in winter.

In summer, the head, neck, upper parts and sides, spotted and barred with yellow and brownish-black; the wings, lower parts, and tail, as in winter.

In autumn, the plumage of the upper parts and sides finely barred with greyish-white and greyish-black; the head, neck, and sides retaining the yellow summer feathers longest; the wings, lower parts, and tail, as in winter.

Young spotted and barred with yellow and dark brown; wings white, the shafts of the primaries dusky; tail brownish-black; the middle feathers barred with yellow and dark grey.

Male, $15\frac{1}{2}$, 28, 8, $\frac{9}{12}$, $1\frac{1}{2}$, 1, $\frac{7}{12}$. Female, 14, 25.

The Ptarmigan of the Grampians and other mountainous regions of the north of Scotland, is very little inferior in size to the common "Red Grouse," which it exactly resembles in form. It inhabits the higher parts of our more elevated mountains, that is, from the height of 3000 feet upwards, feeding on Calluna vulgaris, vaccinia, Empetrum nigrum, and various alpine plants. Its voice has a close resemblance to the croak of a frog. In autumn it collects into large flocks or packs, descends from the summits in winter, but never enters the lower regions. These beautiful birds, as I have elsewhere stated, while feeding, run and walk among the weather-beaten and lichen-crusted fragments of rock, from which it is very difficult to distinguish them when they remain motionless, as they invariably do should a person be in sight. Indeed, unless he is directed to a particular spot by their strange low croaking cry, one may pass through a flock of ptarmigans without observing a single individual, although some of them may not be ten feet distant. When squatted, however, they utter no sound, their object being to conceal themselves; and, if you discover the one from which the cry has proceeded, you generally find him on the top of a stone, ready to spring off the moment you shew an indication of hostility. If roused, they generally fly off in a loose body, with a direct and moderately rapid flight, resembling that of the

other species, but lighter, and settle on a distant part of the mountain, or betake themselves to one of the neighbouring summits. The eggs are similar to those of our other species, but somewhat smaller, and generally with larger blotches. As an article of food, this species is not so highly esteemed as the other, its flesh having less of that peculiar flavour which gives it its chief merit.

After examining about sixty specimens belonging to this genus, independently of several dozens of the present species, I have thought that not only is our Red Grouse peculiar to Britain, but also our Grey Ptarmigan; for, I think, the Continental bird that has been confounded with it differs as much from it, as it differs from the Lagopus rupestris of America. Should this opinion be correct, our bird might be named *Lagopus Scoticus.*

Ptarmigan. White Game. White Grouse.

Tetrao lagopus, Linn. Syst. Nat. i. 274.—Tetrao lagopus, Temm. Man. d'Ornith. ii. 468.—Lagopus cinereus, Grey Ptarmigan, MacGillivray, Brit. Birds, i. 187.

APPENDIX.

In the seventeenth number of Mr Yarrel's History of British Birds, a work remarkable for the great beauty of its engravings, as well as for more important merits, it is stated that a specimen of the Purple Martin, *Hirundo purpurea,* of America, was recently shot near Kingston, in the county of Dublin, and is now preserved in the Museum of the Royal Dublin Society. This statement is given on the authority of Mr Frederick M'Coy of Dublin. Of course, Hirundo purpurea is to be added to the list of British Birds, and comes very opportunely, as it reduces our terrestrial species to an even number. The following characters are those given by me in Mr Audubon's Synopsis.

160. Hirundo purpurea. Purple Martin.

Bill rather stout; wings as long as the tail, which is deeply emarginate; plumage silky, shining, purplish-black, with steel blue reflections; quills and tail-feathers brownish-black; tarsi and toes purplish-black. Female with the upper parts paler,

and tinged with grey, the lower light-grey, longitudinally streaked with black.

Male, 7½, 16.

This species is generally dispersed over the United States and British Colonies of North America in summer. As we have so many visitants from that continent of late years, it would not be very surprising to find a colony of wild Turkeys in Cunnemara, especially as that species is already reported to have settled in Dalmatia. As M. Temminck says of the ornithologists, "tout le monde s'en mele." The birds themselves seem to be nearly as unsettled. We have winged visiters from the Pole, from Scandinavia, Iceland, America, Southern Europe, Africa, and Asia. Possibly a still greater interchange may yet take place, and wandering birds become permanently resident with us. As to the unsettled state of ornithology itself, opinions must always fluctuate until knowledge is perfect, which, I presume, few will assert it to be.

END OF LAND BIRDS.

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